

# Health Care Financing

## Special Report

Hospital Data by Geographic Area for  
Aged Medicare Beneficiaries:  
Selected Procedures, 1986

Volume 2



U.S. Department of Health and Human Services  
Health Care Financing Administration  
Office of Research and Demonstrations



# Health Care Financing

## Special Report

The Health Care Financing Administration (HCFA) was established to combine health financing and quality assurance programs within a single Agency. HCFA is responsible for the Medicare Program, Federal participation in the Medicaid program, and a variety of other health care quality assurance programs.

The mission of HCFA is to promote the timely delivery of appropriate and quality health care to the 29.0 million Medicare enrollees and the 21.6 million Medicaid recipients among the Nation's aged, disabled, and poor. The Agency must also ensure that program beneficiaries are aware of the services for which they are eligible, that those services are accessible and of high quality, and that Agency policies and actions promote efficiency and quality within the total health care delivery system.

The Office of Research and Demonstrations (ORD) conducts studies and projects that demonstrate and evaluate optional reimbursement, coverage,

eligibility, and management alternatives to the present Federal programs. In addition, ORD examines the impact of HCFA programs on health care status, utilization, and expenditures, as well as their effect on beneficiary access to services, health care providers, and the health care industry.

The Health Care Financing Special Report series presents single theme reports that provide in-depth coverage of an important issue in health care financing.

*Hospital Data by Geographic Area for Aged Medicare Beneficiaries: Selected Procedures, 1986* is part of HCFA's efforts to provide the public with information on the use of Medicare-covered services and outcomes of treatment, and how these vary among different geographic areas.

This report should be useful in promoting further understanding of the reasons for geographic variations in the use of services and in generating hypotheses for additional research.



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**U.S. Department of Health and Human Services**  
Health Care Financing Administration  
Office of Research and Demonstrations  
Baltimore, Maryland 21207

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# Contents

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Introduction	1
Summary of selected procedures	5
Percutaneous transluminal coronary angioplasty	9
Coronary artery bypass	31
Cardiac catheterization	55
Permanent cardiac pacemaker implantation	77
Carotid endarterectomy	99
Partial excision of large intestine	121
Cholecystectomy	143
Repair of inguinal hernia	165
Prostatectomy	187
Hysterectomy	209
Total hip replacement	231
Reduction of fracture of the femur	253
Other arthroplasty of hip	275
Total knee replacement	297
Appendixes	319
A. Statistical Note	319
Reliability of estimates and testing for significant differences	319
Description of boxplots	320
B. Procedure categories	330





# Introduction

This two-volume compilation of data is part of efforts of the Health Care Financing Administration (HCFA) to provide information on the use of inpatient hospital services and on the outcomes of treatment. The information has been assembled to display how the rates of use of inpatient hospital services and the outcomes of care received by Medicare beneficiaries vary by demographic characteristics and across different geographic areas. Volume 1 contains rates of hospitalization, 30-day post-admission mortality, and population mortality for 26 diagnostic groupings. Volume 2 contains rates of hospitalization and 30-day post-admission mortality for 14 procedures. The data reflect only the experience of the 96.7 percent of Medicare beneficiaries who were not enrolled in health maintenance organizations (HMOs) because complete information is not available for HMO enrollees.

These 14 procedures are among the most frequently performed for the population 65 years of age or over. They include four cardiac procedures; four orthopedic procedures; and prostatectomy, cholecystectomy, partial excision of large intestine, hysterectomy, carotid endarterectomy, and repair of inguinal hernia.

In previous research substantial variation has been identified in the amounts of health services used in different geographic areas. Wennberg, Freeman, and Culp (1987) have identified substantial differences in the use of inpatient hospital services between the

populations of New Haven, Connecticut, and Boston, Massachusetts, despite the fact that they are similar demographically. Wennberg and Gittelsohn (1973, 1982) have also found significant variation in rates of tonsillectomy, hysterectomy, prostatectomy, and other procedures among hospital areas in New England. Chassin et al. (1986) found large differences in the use of both medical and surgical services among Medicare beneficiaries residing in 13 large areas (i.e., States or parts of States). It is not known, however, whether the variation in rates is medically appropriate. Variations in use of services and in outcomes of care may reflect differences in health status or in incidence of certain diseases among populations as well as differences in practice patterns among areas. Blumberg (1986) has found substantial differences in average health status among metropolitan areas, after adjusting for age. Blumberg (1982, 1987) has also reported, however, that regional differences in use of hospital inpatient services do not parallel differences in reported morbidity. Chassin et al. (1987) found evidence of inappropriate use of coronary angiography, carotid endarterectomy, and upper gastrointestinal tract endoscopy among Medicare beneficiaries. Wennberg et al. (1977) reported that rates of tonsillectomy declined substantially in Vermont after feedback on geographical variations in tonsillectomy rates was given to Vermont physicians. Similarly, Keller (1987) has reported that, in certain areas of Maine, high rates of lumbar

laminectomy, hysterectomy, and prostatectomy were reduced after physicians practicing in those areas were provided with information on their rates compared with the State average. However, in their studies, Keller and Wennberg did not address the issue of whether care became more appropriate in these areas.

These volumes contain more complete information on demographic and small area variations in hospitalizations than has been available. They contain the experience of the aged Medicare population in the entire United States. It is anticipated that this information will be of interest to researchers, physicians, hospital administrators, peer review organizations, and policy analysts. In addition, the data can be used to answer such questions as:

- What kinds of conditions are associated with the largest degrees of geographic variation? What conditions show relatively small geographic variation?
- Do areas that tend to have high rates of one type of surgery tend to have high rates of other kinds of surgery?
- Do areas that have high rates of surgery have high rates of hospitalization for related medical conditions?
- What is the relationship between hospitalization rates and post-admission mortality rates?
- What is the relationship between hospitalization rates for a given condition and population mortality for the same condition?



- How do rates of hospitalization and mortality vary by age, sex, and race? Which conditions and procedures exhibit the greatest variations by these demographic characteristics?

Some of these questions have been addressed in previous research, but with smaller and less comprehensive data bases than are available here. It is important to observe that hospitalization rates in high-rate areas may not be inappropriately high and, conversely, that hospitalization rates in low-rate areas may not be inappropriately low. Similarly, different rates of post-admission mortality may or may not be indicative of the quality of care received. To address such issues, additional information and analyses will be needed.

## Methods

The data reported in this volume were derived primarily from the Medicare provider analysis and review (MEDPAR) file for calendar year 1986. Almost all hospitalizations of the elderly in short-stay hospitals are covered under Medicare. This file contains one record for each Medicare-covered stay in a short-stay hospital with a date of discharge in 1986. The MEDPAR file contains dates of admission and discharge, up to five diagnoses (including the principal diagnosis), and up to three procedures (including dates of the procedures). The diagnoses and procedures are coded using the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM). State and county of residence of the beneficiary are also included on each record. Date of death, obtained from the

Medicare enrollment files, is appended to the record so that deaths can be tracked after discharge from the hospital. Enrollment data for the aged Medicare population by State and county were obtained from the 1986 Health Insurance Skeleton Write-Off (HISKEW) file, which contains a record on all Medicare beneficiaries entitled during that year, regardless of whether they used any services.

The 1986 MEDPAR file contains data from all inpatient hospital bills received in the Medicare Statistical System as of December 1988. The Bureau of Data Management and Strategy (BDMS) estimates this file to be at least 95 percent complete. Although the file is relatively complete overall, the degree of completeness varies by geographic area. Specifically, BDMS estimates inpatient hospital claims for residents of North Carolina and the District of Columbia to be only 87-90 percent complete; for residents of Maryland, New York, and Oregon, claims are estimated to be 93-94 percent complete. All other States are estimated to be at least 95 percent complete.

Approximately 97 percent of persons 65 years of age or over are covered by Medicare. Only data from records of aged beneficiaries are included in this volume; that is, records of disabled enrollees under 65 years of age and of persons entitled to Medicare solely because of end stage renal disease (ESRD) have been excluded. In addition, aged beneficiaries with ESRD have been excluded. Aged non-ESRD beneficiaries comprise approximately 90 percent of the Medicare population.

A list of the 14 procedures and their definitions is provided in Appendix B. For the procedure categories, all 3 of the

procedure codes available on the MEDPAR records were used to identify hospital stays with the 14 study procedures. These procedures were chosen primarily because they are among the most commonly performed on the elderly. Almost all are generally performed on an inpatient basis. Because all three procedure codes were used in categorizing hospitalizations to procedure categories, a given hospitalization could be assigned to more than one procedure category. For each procedure category, separate tables have been prepared that contain information on every hospitalization with a procedure code within that category and with a date of discharge in 1986.

Each Table 1 contains national data for the specific procedure by age, sex, and race. Because of limitations in data collected by the Social Security Administration, data by race are shown separately only for white persons and black persons. However, the "All persons" category contains data on persons of other races as well.

Tables 2 and 3 contain data by area of residence of the beneficiaries rather than by place of service; that is, it is the beneficiary's residence that determines the geographic area to which a given hospital stay is assigned. Geographic areas are defined in two ways. In Table 2, the data are aggregated by metropolitan and rural areas within each State. In Table 3, the data are aggregated by Metropolitan Statistical Area (MSA). MSAs are defined by the U.S. Bureau of the Census and consist of one or more counties comprising a given metropolitan area.

Tables 2 and 3 contain hospitalization and mortality data adjusted by age and sex. The adjusted data are controlled for differences between the local area and the United States



with respect to the age and sex distributions of the populations. The age groups used for adjustment were 65–74 years, 75–84 years, and 85 years of age or over. The indirect method was used for adjustment. A description of the indirect method of adjustment can be found in Fleiss (1981). The direct method could not be used because of small numbers of hospitalizations for certain conditions in many local areas. Table 1, which contains national data by age, sex, and race, has unadjusted rates.

The rates in this volume are based on data for 100 percent of the beneficiaries. Thus, they are not subject to sampling error. However, the rates could be thought of as a sample of data from one year out of many; an unusual value may simply be a chance occurrence. To give the user a rough indication of whether unusual values might be attributed to chance, statistical tests appropriate for sample data were performed. The rates have been annotated with a plus or minus sign when the difference between an area's rate and the U.S. rate was significant at the .01 level. It should be noted that such tests based on 1 year of data do not necessarily take account of all sources of variation which may cause year-to-year fluctuations. The formula used for testing the rate for significance could not be applied when the rate was zero. Hence, a rate of zero will never be annotated. A more thorough description of this process as well as several cautions are discussed in Appendix A.

The intent of this annotation is to highlight rates that may be unusually high or low while taking into account the element of chance. The user should neither automatically ignore rates that are not annotated nor automatically place undue

importance on rates which are annotated. There are at least two reasons for this. First, a significance level of .01 or smaller may be appropriate for the user whose interests lie primarily in finding those areas most likely to be extremes. However, for the user with an interest in a particular area, a larger significance level may be appropriate, especially if information on past rates led one to anticipate the approximate value of the current rate. In other words, a rate may be meaningfully different for some purposes even if it is not statistically significantly different from the norm at the .01 level. Second, significance tests are heavily dependent on sample size. Large differences may not be statistically significant if sample sizes are small. Thus, the difference should not be uncritically dismissed. Alternatively, with large samples, differences so small that they have no practical importance can show up as statistically significant.

Figures of maps and boxplots have been created using rates from Tables 2 and 3. The maps display State-level rates. The States were grouped into four rate intervals such that each group contains about one-fourth of the States. The boxplots are described in the Appendix.

## Explanation of table columns

*Number of non-HMO enrollees*—This is the total number of aged Medicare enrollees in the demographic category or residing in the geographic area as of July 1, 1986, who were not enrolled in a health maintenance organization operating under a Medicare risk contract at any time in 1986. The reason for identifying non-HMO enrollees is that HCFA does not receive complete information on hospitalizations incurred by

Medicare beneficiaries enrolled under HMO risk contracts. Therefore, complete information on hospital discharges is available only for non-HMO enrollees, and hospitalization and mortality rates were computed only for non-HMO enrollees.

*Non-HMO enrollees as a percent of all enrollees*—This is the ratio of non-HMO enrollees to the total number of Medicare enrollees times 100.

*Number of discharges*—This is the number of hospital discharges with a procedure code for the specified procedure among non-HMO beneficiaries in the demographic category or residing in the geographic area.

*Discharges per 1,000 non-HMO enrollees*—This is the number of hospital discharges per 1,000 Medicare enrollees not enrolled in HMOs.

*30-day post-admission deaths per 1,000 discharges*—This is the number of deaths occurring within 30 days of admission to the hospital per 1,000 discharges. If two hospitalizations involving different procedure categories occurred within 30 days of death, the death is counted for each procedure category. If two hospitalizations involving the same procedure category occurred within 30 days of death, the death was counted once for that procedure category. This measure of death rates is similar to but not the same as the measure of 30-day post-admission death rates used in the HCFA hospital-specific mortality data release. It differs in the following ways:

- It is organized by residence of the patient and not by the hospital where care is rendered.
- It is not adjusted for all of the variables used to adjust mortality in the hospital mortality data release.



- It attributes 30-day post-admission mortality to each hospital stay in 1986 occurring within 30 days of death (with the exception of two hospitalizations for the same condition). For the hospital-specific data release, post-admission mortality is computed using only the last hospitalization in 1986.

Despite these differences, the post-admission mortality measure presented here may give some insight into the hospital-specific data. For instance, it can show whether hospitals with high or low rates of post-admission mortality are located in areas with similar patterns of mortality.

*30-day post-admission deaths per 1,000 non-HMO enrollees*—This is the number of deaths occurring within 30 days of admission to the hospital per 1,000 Medicare enrollees residing within the appropriate geographic area who were not enrolled in an HMO. The numerator of this statistic is the same as the numerator in the previous column, but the denominator is all Medicare non-HMO enrollees, not hospital discharges, yielding a population-based rate of hospital-associated mortality. This statistic is included to facilitate the interpretation of the 30-day post-admission death rate per 1,000 discharges. The denominator of that rate is affected by local practice patterns, such as the tendency to hospitalize certain types of patients who might not be hospitalized in other local areas.

## Notes on table stubs

*Table 1*—Data on racial groups other than white and black were not included because of small numbers and because of a

substantial number of beneficiaries of unknown race. Consequently, subtotals for white and black persons do not add to overall totals for the Medicare aged population.

*Table 2*—All beneficiaries in each State reside in either a metropolitan or rural (nonmetropolitan) county. Therefore, subtotals for metropolitan and rural areas add to State totals.

*Table 3*—Many MSAs cross State boundaries. Each MSA is listed under the State in which the majority of persons in that MSA reside. Data listed under a specific MSA pertain to all residents of that MSA, including those residing in States other than the one where the MSA is listed. Consequently, subtotals for MSAs do not necessarily add to Statewide metropolitan area totals.

## Data tape

The information used to compute the rates presented in this volume will be available on a small area basis on a public use tape. Persons interested in obtaining additional information about the public use tape should contact the Bureau of Data Management and Strategy, Office of Statistics and Data Management, Room 3-A-12, Security Office Park, 6325 Security Boulevard, Baltimore, Maryland 21207.

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# Summary of selected procedures

Information presented here is a summary of the data presented in the following sections for 14 major procedures. These 14 procedures combined totalled 66.35 discharges per 1,000 enrollees, or 20.3 percent of all hospital discharges.

Tables 1 through 5 contain the rates of discharge per 1,000 enrollees and the rates of 30-day post-admission deaths per 1,000 discharges for these procedures by age, sex, race, and geographic areas. The data in this summary are shown by one demographic variable only. The tables in each section that follows are more detailed.

Table 1 contains data by age. Discharge rates rose with age for permanent cardiac pacemaker implantation, reduction of fracture of the femur, and other arthroplasty of the hip. The latter two procedures are associated with the diagnosis of fracture of the neck of the femur, which also increased with age. In contrast, discharge rates decreased with age for coronary angioplasty, coronary artery bypass, cardiac catheterization, and hysterectomy. For partial excision of the large intestine, cholecystectomy, repair of inguinal hernia, total hip replacement, and total knee replacement, discharge rates were highest for persons aged 75-84 years. Carotid endarterectomy discharge rates were similar for persons aged 65-74 years and for those aged 75-84 years, while prostatectomy discharge rates were similar for those aged 75-84 and those 85 years of age or over. The 30-day post-admission death rates rose with age for all procedures.

Table 2 contains data by sex. Discharge rates for men were much higher than those for women for coronary angioplasty, coronary artery bypass, cardiac catheterization, carotid endarterectomy, and repair of inguinal hernia; and they were somewhat higher for partial excision of the large intestine and permanent cardiac pacemaker implantation. Discharge rates were higher for women than men for cholecystectomy and for all the orthopedic procedures (total hip replacement, reduction

of fracture of the femur, other arthroplasty of the hip, and total knee replacement).

The 30-day post-admission death rates were higher for women than for men for coronary angioplasty and coronary artery bypass; similar for both sexes for cardiac catheterization and repair of inguinal hernia; and higher for men than for women for permanent cardiac pacemaker implantation, carotid endarterectomy, partial excision of the large intestine,

**Table 1. Short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by age and procedure: United States, 1986**

Procedure	Discharges per 1,000 non-HMO enrollees					30-day post-admission deaths per 1,000 discharges				
	All ages	65-74 years	75-84 years	85 years or over	All ages	All ages	65-74 years	75-84 years	85 years or over	
All procedures	66.35	61.07	76.60	75.02	NA	NA	NA	NA	NA	NA
Coronary angioplasty	1.27	1.69	0.78	0.11	37.8	31.2	63.7	98.9		
Coronary artery bypass	2.73	3.63	1.73	0.13	60.8	53.4	89.6	165.1		
Cardiac catheterization	9.12	11.87	6.13	1.01	51.9	40.5	87.9	218.6		
Permanent cardiac pacemaker implantation	2.23	1.26	3.44	4.61	37.6	29.2	37.9	51.4		
Carotid endarterectomy	1.83	1.98	1.95	0.50	21.2	18.3	25.4	40.5		
Partial excision of the large intestine	3.75	3.11	4.80	4.44	70.2	47.3	80.8	136.7		
Cholecystectomy	4.91	4.85	5.26	4.18	35.0	19.8	48.4	94.8		
Repair of inguinal hernia	3.60	3.38	4.20	3.08	11.8	5.3	15.9	39.5		
Prostatectomy	22.87	18.92	30.95	29.08	13.0	7.1	16.2	37.7		
Hysterectomy	2.99	3.74	2.44	0.83	8.9	6.0	14.5	29.7		
Total hip replacement	2.35	2.06	2.95	2.34	17.5	9.0	19.6	57.4		
Reduction of fracture of the femur	4.43	1.65	6.22	16.62	59.1	34.7	52.4	82.5		
Other arthroplasty of the hip	2.24	0.89	3.35	7.34	55.3	30.7	48.9	83.9		
Total knee replacement	2.03	2.04	2.40	0.75	5.5	3.7	7.8	13.2		

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. NA denotes not applicable.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Table 2. Short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by sex and procedure: United States, 1986**

Procedure	Discharges per 1,000 non-HMO enrollees			30-day post-admission deaths per 1,000 discharges		
	Both sexes	Men	Women	Both sexes	Men	Women
Coronary angioplasty	1.27	1.87	0.87	37.8	36.7	39.4
Coronary artery bypass	2.73	4.57	1.50	60.8	52.0	78.7
Cardiac catheterization	9.12	12.82	6.67	51.9	51.2	52.8
Permanent cardiac pacemaker implantation	2.23	2.57	2.00	37.6	41.8	33.9
Carotid endarterectomy	1.83	2.53	1.37	21.2	22.5	19.5
Partial excision of the large intestine	3.75	3.88	3.66	70.2	73.3	68.0
Cholecystectomy	4.91	4.73	5.03	35.0	42.8	30.1
Repair of inguinal hernia	3.60	7.96	0.70	11.8	11.8	11.6
Total hip replacement	2.35	1.93	2.64	13.0	20.4	16.1
Reduction of fracture of the femur	4.43	2.33	5.83	59.1	95.3	49.5
Other arthroplasty of the hip	2.24	1.14	2.97	55.3	96.9	44.7
Total knee replacement	2.03	1.60	2.32	5.5	8.0	4.4

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Table 3. Short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by race and procedure: United States, 1986**

Procedure	Discharges per 1,000 non-HMO enrollees			30-day post-admission deaths per 1,000 discharges		
	All persons <sup>1</sup>	White	Black	All persons <sup>1</sup>	White	Black
Coronary angioplasty	1.27	1.35	0.43	37.8	37.6	42.5
Coronary artery bypass	2.73	2.90	0.81	60.8	60.3	79.9
Cardiac catheterization	9.12	9.51	4.93	51.9	52.1	48.6
Permanent cardiac pacemaker implantation	2.23	2.28	1.90	37.6	37.4	39.6
Carotid endarterectomy	1.83	1.96	0.54	21.2	21.1	22.2
Partial excision of the large intestine	3.75	3.83	3.08	70.2	70.2	78.5
Cholecystectomy	4.91	5.07	3.05	35.0	34.5	45.3
Repair of inguinal hernia	3.60	3.73	2.45	11.8	11.5	20.4
Prostatectomy	22.87	23.09	21.82	13.0	13.0	14.5
Hysterectomy	2.99	3.08	2.00	8.9	8.8	15.0
Total hip replacement	2.35	2.48	1.09	17.5	17.7	16.2
Reduction of fracture of the femur	4.43	4.69	1.99	59.1	59.7	51.4
Other arthroplasty of the hip	2.24	2.36	1.05	55.3	55.3	64.7
Total knee replacement	2.03	2.11	1.21	5.5	5.5	6.2

<sup>1</sup> Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

cholecystectomy, total hip replacement, reduction of fracture of the femur, other arthroplasty of the hip, and total knee replacement.

Table 3 contains data by race. White Medicare enrollees had considerably higher discharge rates than black enrollees had except for prostatectomy, for which rates were similar.

Black enrollees had higher 30-day post-admission death rates for most procedures. The exceptions were cardiac catheterization, total hip replacement, and reduction of fracture of the femur, for which white enrollees had higher rates.

Table 4 contains data by urban and rural residence. There was no clear pattern for discharge rates or for 30-day post-admission death rates by urban and rural areas; about one-half of the procedures had higher rates in the rural areas and about one-half had higher rates in the urban areas. Many of the rates were quite similar in urban and rural areas.

Table 5 contains data by region. Discharge rates tended to be lowest for residents of the Northeast Region. This was true for 10 of the 14 procedures, including all orthopedic procedural groups. Discharge rates for residents of the North Central, South, and West were similar for most procedures. No single region had a majority of the highest rates of discharge. The least difference between the lowest and highest discharge rates was 8 percent for reduction of fracture of the femur (4.19 discharges per 1,000 enrollees in the Northeast versus 4.53 discharges per 1,000 enrollees in the South), and the greatest difference was 118 percent for coronary angioplasty (0.74 discharges per 1,000 enrollees in the Northeast versus 1.61 discharges per 1,000 enrollees in the West).



**Table 4. Short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by metropolitan and rural counties and procedure: United States, 1986**

Procedure	Discharges per 1,000 non-HMO enrollees			30-day post-admission deaths per 1,000 discharges		
	United States	Metropolitan	Rural	United States	Metropolitan	Rural
Coronary angioplasty	1.27	1.28	1.25	37.8	37.5	38.5
Coronary artery bypass	2.73	2.75	2.67	60.8	62.4	56.5
Cardiac catheterization	9.12	9.20	8.92	51.9	52.8	49.4
Permanent cardiac pacemaker implantation	2.23	2.27	2.14	37.6	37.0	39.0
Carotid endarterectomy	1.83	1.81	1.88	21.2	20.9	21.7
Partial excision of the large intestine	3.75	3.84	3.49	70.2	69.0	73.6
Cholecystectomy	4.91	4.61	5.70	35.0	35.0	34.9
Repair of inguinal hernia	3.60	3.52	3.79	11.8	11.9	11.5
Prostatectomy	22.87	22.84	22.94	13.0	12.6	13.9
Hysterectomy	2.99	2.90	3.24	8.9	9.1	8.6
Total hip replacement	2.35	2.31	2.48	17.5	18.0	16.4
Reduction of fracture of the femur	4.43	4.44	4.42	59.1	58.5	60.6
Other arthroplasty of the hip	2.24	2.18	2.40	55.3	54.4	57.5
Total knee replacement	2.03	1.90	2.38	5.5	5.8	5.0

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not enrolled in health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

The 30-day post-admission death rate per 1,000 discharges showed no particular pattern by region for these procedures. No single region had a majority of the highest or lowest rates. Differences between the lowest and highest death rates ranged from a 9-percent difference for coronary artery bypass (57.4 deaths per 1,000 discharges in the Northeast and 62.7 deaths per 1,000 discharges in the West) to a 69-percent difference for total knee replacement (4.2 deaths per 1,000 discharges in the North Central and 7.1 deaths per 1,000 discharges in the South).

## Correlations between rates

The correlation between the number of discharges per 1,000 enrollees and 30-day

post-admission deaths per 1,000 discharges are shown in Table 6. The correlations were calculated using rates for metropolitan statistical areas and rural areas.

There were only three procedures for which this correlation was statistically significant. For percutaneous transluminal coronary angioplasty, the correlation was positive but low (0.17). For cardiac catheterization and repair of inguinal hernia, the correlation was negative and relatively low also ( $-0.15$  and  $-0.22$ , respectively). There were very low correlation rates and no statistical significance for the remaining 11 procedures.

Table 5. Short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by region and procedure: United States, 1986

Procedure	Discharges per 1,000 non-HMO enrollees				30-day post-admission deaths per 1,000 discharges					
	United States	North- east	North Central	South West	United States	North- east	North Central	South West		
Coronary angioplasty	1.27	0.74 –	1.50 +	1.28	1.61 +	37.8	32.8	42.3	39.5	32.1
Coronary artery bypass	2.73	2.22 –	2.91 +	2.89 +	2.82	60.8	57.4	62.4	60.5	62.7
Cardiac catheterization	9.12	6.96 –	9.80 +	10.15 +	9.03	51.9	61.2 +	50.3	48.1 –	53.1
Permanent cardiac pacemaker implantation	2.23	2.17	2.11 –	2.40 +	2.16	37.6	39.0	38.0	38.7	32.4 –
Carotid endarterectomy	1.83	1.19 –	1.99 +	2.03 +	2.07 +	21.2	19.4	19.6	21.9	23.2
Partial excision of the large intestine	3.75	3.98 +	3.86 +	3.55 –	3.62 –	70.2	66.1	71.5	73.5	67.9
Cholecystectomy	4.91	4.24 –	5.20 +	5.37 +	4.49 –	35.0	32.2	36.3	34.9	36.4
Repair of inguinal hernia	3.60	3.83 +	4.00 +	2.73 +	2.44 –	11.8	12.1	12.4	11.6	10.6
Prostatectomy	22.87	21.98 –	23.66 +	23.59 +	21.51 –	13.0	12.5	12.6	14.2	11.8
Hysterectomy	2.99	2.65 –	3.23 +	2.96	3.20 +	8.9	9.5	8.8	8.4	9.4
Total hip replacement	2.35	2.00 –	2.67 +	2.04 –	2.99 +	17.5	17.9	15.5	19.7	16.9
Reduction of fracture of the femur	4.43	4.19 –	4.48 +	4.53	4.52	59.1	54.3 –	62.6	60.8	56.3
Other arthroplasty of the hip	2.24	1.88 –	2.38 +	2.33 +	2.34 +	55.3	50.1	56.2	58.2	54.4
Total knee replacement	2.03	1.53 –	2.59 +	1.81 –	2.32 +	5.5	6.2	4.2	7.1	4.9

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not enrolled in health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate ( $p = .01$ ).

**SOURCE:** Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Table 6. Correlations between short-stay hospital discharges and post-admission deaths per 1,000 discharges for aged Medicare enrollees, by procedure: United States, 1986**

Procedure	Correlation between discharge rate and 30-day post-admission deaths per 1,000 discharges
Coronary angioplasty	0.17
Coronary artery bypass	-0.10
Cardiac catheterization	1 -0.15
Permanent cardiac pacemaker implantation	0.08
Carotid endarterectomy	-0.05
Partial excision of the large intestine	-0.08
Cholecystectomy	0.10
Repair of inguinal hernia	1 -0.22
Prostatectomy	0.12
Hysterectomy	-0.03
Total hip replacement	0.04
Reduction of fracture of the femur	0.11
Other arthroplasty of the hip	0.02
Total knee replacement	-0.09

<sup>1</sup> Denotes correlation is significant at the  $p < .01$  level.



# Percutaneous transluminal coronary angioplasty

The incidence of percutaneous transluminal coronary angioplasty (PTCA) has increased rapidly in recent years. In 1985, about 22,000 PTCA operations were performed on Medicare enrollees 65 years of age or over; by 1986, there were 33,958 PTCA operations performed on Medicare enrollees (Table 1). (Preliminary data indicate that the number of PTCA operations on aged Medicare enrollees increased to about 50,000 in 1987.) The rate of operations in 1986 was 1.27 per 1,000 enrollees. The 30-day post-admission death rate was 37.8 deaths per 1,000 discharges.

A coding change implemented in 1986 affects the precision and accuracy of the data presented on PTCA. Prior to October 1986, PTCAs were included in ICD-9-CM code 36.0 that also included other operations such as coronary endarterectomy. Although most operations coded under 36.0 were PTCAs, some were not. It is estimated that between 75 and 91 percent of the 33,958 procedures included under PTCA in 1986 were really PTCAs. Beginning with October 1986, PTCAs were assigned two separate codes, 36.01 and 36.02, allowing for their exact identification. Thus, the data presented here for 1986 include PTCAs identified under both coding rules and, hence, do not precisely reflect PTCAs.

NOTE: Percutaneous transluminal coronary angioplasty was ICD-9-CM code 36.0 before October 1986; codes 36.01, 36.02 after October 1986; and is code 36.05 since October 1987.

## Age and sex patterns

The discharge rate for men for PTCA was more than double that for women (1.87 discharges per 1,000 enrollees versus 0.87 per 1,000). The incidence of PTCA operations drops sharply with age. There were 1.69 PTCAs per 1,000 enrollees in the age group 65-74 years, 0.78 in the group 75-84 years, and 0.11 in the group 85 years of age or over. The rate of 30-day post-admission deaths per 1,000 discharges was somewhat higher for women than for men (39.4 versus 36.7). Rates of 30-day post-admission deaths per 1,000 discharges increased with age. The rate for patients aged 65-74 years was 31.2 deaths per 1,000 discharges; the rate for patients 85 years of age or over was 98.9 per 1,000.

## Patterns by race

Black Medicare enrollees had a considerably lower rate of PTCA operations than white enrollees. The rate for black persons was 0.43 operations per 1,000 enrollees; the rate for white persons was 1.35 operations per 1,000. The rate of 30-day post-admission deaths per 1,000 discharges was slightly higher for black persons than for white persons (42.5 deaths per 1,000 versus 37.6), but the rate for black persons was based on only 848 total operations in 1986.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

The lowest discharge rates were found in the New England States, New York, New Jersey, and in some other States scattered across the country (Figure 1). The highest discharge rates were found in several contiguous States in the West and in the central part of the country. Montana had the highest rate (2.82 discharges per 1,000); Alaska (0.48 per 1,000) and Maine (0.52 per 1,000) had the lowest. Variations in the discharge rate for MSAs and rural areas within the United States and within the census divisions are shown in Figure 2. Also shown are a high median rate and a large range in the rate among MSAs and rural areas in the West North Central Division and low median rates in the New England and Middle Atlantic Divisions. Because the incidence of this procedure is increasing rapidly, the geographic pattern seen in 1986 may not be the pattern that will be seen for more recent years.

### Post-admission death rates

No clear geographic pattern in rates of 30-day post-admission deaths per 1,000 discharges was evident from data shown in Table 3. Both Alaska and the District of Columbia had no post-admission deaths after PTCA, but the numbers of PTCA operations on which these rates were based were low for residents of these areas. The highest rate of post-admission deaths was for Vermont residents (92.5 deaths per 1,000 discharges), but this rate was based on only 33 cases and was not statistically significantly different from the national rate.

### Urban-rural patterns

Nationally, discharge rates were a little lower for rural residents. The discharge rate was slightly to moderately lower for rural residents in all four census regions. Nationally, the 30-day post-admission death rate per 1,000 discharges was slightly higher for rural residents. The 30-day post-admission death rate was higher for urban residents in one census region and higher for rural residents in the three other regions.



Table 1. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

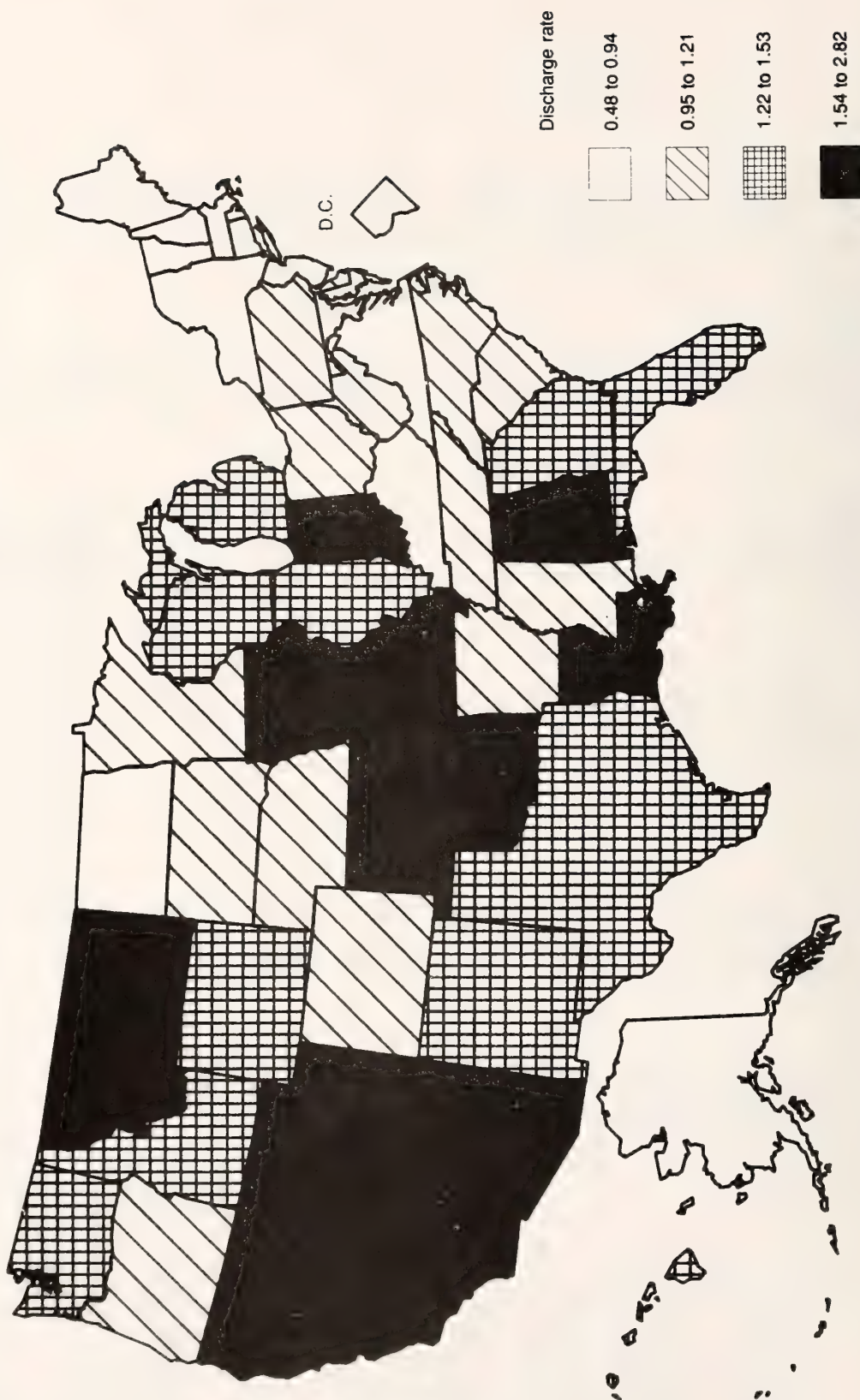
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	33,958	1.27	37.8	0.048
65-74 years	16,162,594	96.33	27,381	1.69	31.2	0.052
75-84 years	8,020,447	96.96	6,294	0.78	63.7	0.049
85 years or over	2,515,883	98.32	283	0.11	98.9	0.011
Men	10,650,991	96.01	19,928	1.87	36.7	0.068
65-74 years	7,056,445	95.90	16,633	2.36	30.1	0.070
75-84 years	2,912,366	96.02	3,168	1.09	68.2	0.074
85 years or over	682,180	97.22	127	0.19	110.2	0.020
Women	16,047,933	97.16	14,030	0.87	39.4	0.034
65-74 years	9,106,149	96.66	10,748	1.18	32.9	0.038
75-84 years	5,108,081	97.51	3,126	0.61	59.2	0.036
85 years or over	1,833,703	98.74	156	0.09	89.7	0.007
White	23,574,066	96.62	31,798	1.35	37.6	0.050
65-74 years	14,207,064	96.23	25,609	1.80	30.9	0.055
75-84 years	7,134,499	96.88	5,923	0.83	64.2	0.053
85 years or over	2,232,503	98.26	266	0.12	94.0	0.011
Men	9,391,016	95.94	18,782	2.00	36.6	0.073
65-74 years	6,216,472	95.83	15,686	2.52	30.0	0.075
75-84 years	2,573,989	95.94	2,977	1.16	69.2	0.080
85 years or over	600,555	97.12	119	0.20	100.8	0.019
Women	14,183,050	97.07	13,016	0.92	39.1	0.035
65-74 years	7,990,592	96.55	9,923	1.24	32.4	0.040
75-84 years	4,560,510	97.42	2,946	0.65	59.1	0.038
85 years or over	1,631,948	98.69	147	0.09	88.4	0.007
Black	1,991,943	97.86	848	0.43	42.5	0.018
65-74 years	1,213,014	97.54	680	0.56	44.1	0.024
75-84 years	583,429	98.11	158	0.27	31.6	0.008
85 years or over	195,500	99.11	10	0.05	100.0	0.005
Men	792,788	97.49	404	0.51	52.0	0.026
65-74 years	519,305	97.28	318	0.61	53.5	0.032
75-84 years	215,401	97.67	80	0.37	37.5	0.013
85 years or over	58,082	98.74	6	0.10	166.7	0.017
Women	1,199,155	98.10	444	0.37	33.8	0.012
65-74 years	693,709	97.74	362	0.52	35.9	0.018
75-84 years	368,028	98.37	78	0.21	25.6	0.005
85 years or over	137,418	99.26	4	0.03	0.0	0.000

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

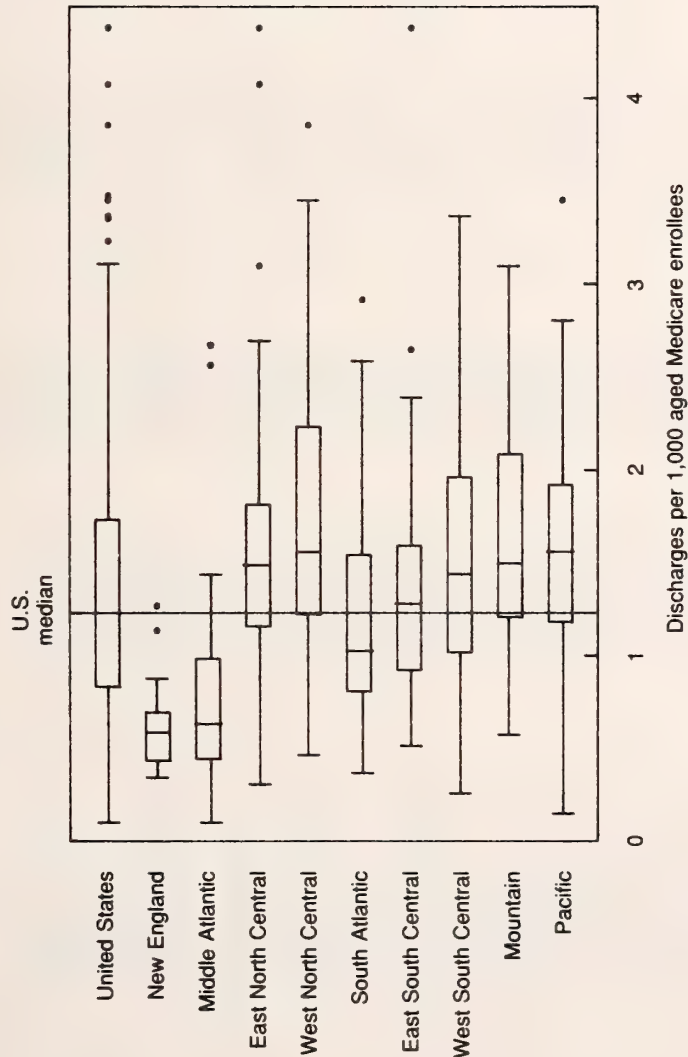
Figure 1. Percutaneous transluminal coronary angioplasty: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.



Figure 2. Percutaneous transluminal coronary angioplasty: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by census division: United States, 1986



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Killeen-Temple, TX	3.24
	Springfield, MO	3.37
	Alexandria, LA	3.38
	Kansas City, MO-KS	3.46
	Des Moines, IA	3.46
	Santa Cruz, CA	3.48
	Topeka, KS	3.86
	Rockford, IL	4.07
	Kalamazoo, MI	4.39
	Tuscaloosa, AL	4.39
New England	New Haven, CT	1.14
	Bridgeport, CT	1.27
Middle Atlantic	Reading, PA	2.57
	Lancaster, PA	2.67
East North Central	Battle Creek, MI	3.10
	Rockford, IL	4.07
	Kalamazoo, MI	4.39
West North Central	Topeka, KS	3.86
South Atlantic	Augusta, GA-SC	2.92
East South Central	Dothan, AL	2.65
	Tuscaloosa, AL	4.39
Pacific	Santa Cruz, CA	3.48

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.



Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
United States	26,698,924	96.70	33,958	1.27	37.8	0.049
Metropolitan	19,363,284	95.80	24,757	1.28	37.5	0.049
Rural	7,335,640	99.16	9,201	1.25	38.5	0.047
Northeast	6,276,897	98.04	4,592	0.74-	32.8	0.023-
Metropolitan	5,564,648	97.84	4,131	0.75-	32.6	0.024-
Rural	712,249	99.69	461	0.64-	34.5	0.021-
New England	1,569,313	96.20	1,081	0.70-	34.9	0.025-
Metropolitan	1,342,886	95.66	960	0.73-	34.0	0.025-
Rural	226,427	99.53	121	0.53-	42.6	0.022-
Maine	153,209	99.88	79	0.52-	14.0	0.006-
Metropolitan	82,345	99.89	49	0.61-	0.0	0.000
Rural	70,864	99.87	30	0.43-	35.9	0.014
New Hampshire	114,752	98.98	62	0.54-	16.5	0.008-
Metropolitan	74,135	98.55	46	0.63-	0.0	0.000
Rural	40,617	99.77	16	0.39-	63.9	0.024
Vermont	62,781	99.82	33	0.53-	92.5	0.048
Metropolitan	10,422	99.91	6	0.59	142.3	0.098
Rural	52,359	99.80	27	0.52-	78.7	0.039
Massachusetts	709,478	93.75	500	0.73-	40.3	0.030-
Metropolitan	659,025	93.40	456	0.72-	41.9	0.031
Rural	50,453	98.58	44	0.87	23.2	0.019
Rhode Island	132,332	97.59	83	0.64-	0.0	0.000
Metropolitan	132,332	97.59	83	0.64-	0.0	0.000
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	324	0.82-	37.2	0.031
Metropolitan	384,627	97.50	320	0.83-	37.8	0.032
Rural	12,134	99.66	4	0.33-	0.0	0.000
Middle Atlantic	4,707,584	98.68	3,511	0.75-	32.1	0.023-
Metropolitan	4,221,762	98.55	3,171	0.76-	32.2	0.023-
Rural	485,822	99.76	340	0.69-	31.5	0.020-
New York	2,143,249	98.98	1,126	0.54-	23.8-	0.012-
Metropolitan	1,922,371	98.89	996	0.53-	24.7-	0.012-
Rural	220,878	99.75	130	0.59-	16.7	0.009-

See notes at end of table.



Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	672	0.73-	29.3	0.020-
Metropolitan	916,155	97.84	672	0.73-	29.3	0.020-
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	1,713	1.03-	38.6	0.039
Metropolitan	1,383,236	98.56	1,503	1.08-	38.3	0.042
Rural	264,944	99.78	210	0.78-	40.6	0.030
North Central	6,901,975	96.39	10,249	1.50+	42.3	0.064+
Metropolitan	4,398,761	95.22	6,570	1.51+	41.5	0.063+
Rural	2,503,214	98.51	3,679	1.49+	43.7	0.065+
East North Central	4,745,430	97.76	6,442	1.36+	37.1	0.051
Metropolitan	3,453,558	97.13	4,694	1.36+	38.4	0.053
Rural	1,291,872	99.47	1,748	1.35	33.6	0.044
Ohio	1,263,869	99.46	1,544	1.21	35.2	0.042
Metropolitan	987,528	99.60	1,222	1.23	34.2	0.042
Rural	276,341	98.95	322	1.16	38.8	0.044
Indiana	623,062	97.86	972	1.56+	39.5	0.061
Metropolitan	399,457	97.01	666	1.67+	45.0	0.076
Rural	223,605	99.41	306	1.37	27.1	0.036
Illinois	1,265,011	95.90	1,674	1.34	35.7	0.048
Metropolitan	952,934	94.73	1,221	1.29	38.2	0.050
Rural	312,077	99.68	453	1.49	28.8	0.042
Michigan	982,444	96.86	1,375	1.38	42.6	0.060
Metropolitan	744,347	96.06	988	1.32	42.4	0.057
Rural	238,097	99.44	387	1.57	42.9	0.070
Wisconsin	611,044	99.60	877	1.45	31.9	0.046
Metropolitan	369,292	99.43	597	1.65+	33.1	0.055
Rural	241,752	99.86	280	1.15	29.3	0.033
West North Central	2,156,545	93.50	3,807	1.84+	50.9+	0.094+
Metropolitan	945,203	88.82	1,876	2.08+	49.1	0.103+
Rural	1,211,342	97.51	1,931	1.65+	52.7+	0.087+
Minnesota	397,258	77.30	452	1.21	58.4	0.070
Metropolitan	187,915	67.07	250	1.45	56.8	0.085
Rural	209,343	89.55	202	1.00	60.7	0.058

See notes at end of table.

Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa	404,057	99.37	783	2.02+	73.0+	0.146+
	136,818	98.24	280	2.11+	75.9	0.158+
Metropolitan	267,239	99.96	503	1.97+	71.4+	0.139+
Rural						
Missouri	555,875	98.17	1,354	2.13+	44.1	0.095+
	383,255	96.99	781	2.12+	37.7	0.081
Metropolitan	272,620	99.88	573	2.14+	52.9	0.115+
Rural						
North Dakota	85,433	98.28	70	0.83-	30.8	0.023
	22,964	98.14	28	1.26	39.8	0.044
Metropolitan	62,469	98.34	42	0.68-	25.1	0.016
Rural						
South Dakota	96,216	99.59	102	1.09	10.3-	0.010-
	20,427	99.92	36	1.79	0.0	0.000
Metropolitan	75,789	99.51	66	0.90	16.1	0.013-
Rural						
Nebraska	209,910	98.52	234	1.17	38.1	0.043
	70,076	95.86	113	1.68	62.6	0.103
Metropolitan	139,834	99.91	121	0.91-	16.1	0.014-
Rural						
Kansas	307,796	95.82	812	2.76+	47.2	0.134+
	123,748	93.24	388	3.22+	49.4	0.166+
Metropolitan	184,048	97.63	424	2.44+	45.3	0.112
Rural						
South	8,980,101	97.94	11,626	1.28	39.5	0.050
	5,757,016	96.87	7,947	1.37+	41.5	0.056
Metropolitan	3,223,085	99.91	3,679	1.13-	35.3	0.040
Rural						
South Atlantic	4,668,855	96.31	5,848	1.23	36.8	0.045
	3,313,125	94.94	4,370	1.31	39.2	0.051
Metropolitan	1,355,730	99.84	1,478	1.06-	29.3	0.030-
Rural						
Delaware	70,251	99.94	70	0.97	44.7	0.042
	44,355	99.95	47	1.03	46.4	0.045
Metropolitan	25,896	99.94	23	0.85	41.7	0.038
Rural						
Maryland	436,606	99.49	394	0.89-	16.1-	0.013-
	395,091	99.44	342	0.85-	18.4-	0.015-
Metropolitan	41,515	99.95	52	1.23	0.0	0.000
Rural						
District of Col.	66,196	99.75	51	0.82-	0.0	0.000
	66,196	99.75	51	0.82-	0.0	0.000
Metropolitan	0	0.00	0	0.00	0.0	0.000
Rural						

See notes at end of table.



Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Virginia	566,135	99.91	542	0.94-	20.9-	0.019-
Metropolitan	355,193	99.87	380	1.05-	21.8	0.022-
Rural	210,942	99.97	162	0.75-	18.9	0.014-
West Virginia	244,259	98.98	260	1.06	40.1	0.040
Metropolitan	90,704	97.39	110	1.21	28.9	0.033
Rural	153,555	99.95	150	0.97	48.2	0.045
North Carolina	689,138	99.93	699	1.00-	68.3+	0.065
Metropolitan	346,905	99.89	387	1.10	94.6+	0.101+
Rural	342,233	99.96	312	0.89-	34.6	0.029
South Carolina	329,020	99.44	382	1.12	41.2	0.045
Metropolitan	186,873	99.05	221	1.14	51.9	0.058
Rural	142,147	99.95	161	1.09	26.3	0.028
Georgia	561,716	99.71	795	1.40	23.1-	0.032
Metropolitan	313,319	99.54	496	1.57+	21.0-	0.031
Rural	248,397	99.93	299	1.19	26.6	0.032
Florida	1,705,534	90.97	2,655	1.53+	38.6	0.060
Metropolitan	1,514,489	90.04	2,336	1.53+	39.9	0.062
Rural	191,045	99.17	319	1.55	28.4	0.045
East South Central	1,726,272	99.80	1,989	1.16-	52.4+	0.061
Metropolitan	873,594	99.64	1,081	1.24	50.3	0.062
Rural	852,678	99.97	908	1.07-	54.9	0.059
Kentucky	422,657	99.70	327	0.78-	25.8	0.018-
Metropolitan	183,264	99.37	131	0.72-	16.9	0.010-
Rural	239,393	99.96	196	0.82-	31.2	0.025
Tennessee	550,327	99.65	649	1.18	63.7+	0.075
Metropolitan	342,007	99.46	410	1.20	39.6	0.047
Rural	208,320	99.96	239	1.14	104.5+	0.120+
Alabama	463,131	99.97	728	1.57+	57.5	0.093+
Metropolitan	281,960	99.97	446	1.57+	74.5+	0.121+
Rural	181,171	99.97	282	1.56	30.9	0.050
Mississippi	290,157	99.98	285	1.00-	42.5	0.042
Metropolitan	66,363	99.96	94	1.40	21.2	0.030
Rural	223,794	99.98	191	0.88-	53.2	0.045

See notes at end of table.

Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
West South Central						
Metropolitan	2,584,974	99.74	3,789	1.46+	37.1	0.054
Rural	1,570,297	99.59	2,496	1.58+	41.7	0.067+
	1,014,677	99.97	1,293	1.28	28.1	0.036
Arkansas						
Metropolitan	321,739	99.96	372	1.15	34.2	0.040
Rural	100,966	99.98	113	1.13	43.1	0.050
	220,773	99.95	259	1.16	30.3	0.036
Louisiana						
Metropolitan	415,968	99.98	737	1.78+	32.6	0.058
Rural	268,137	99.98	532	1.98+	33.6	0.068
	147,831	99.99	205	1.41	29.9	0.041
Oklahoma						
Metropolitan	378,716	99.02	618	1.66+	45.5	0.077
Rural	180,038	98.00	327	1.85+	55.3	0.107
	198,678	99.96	291	1.49	34.0	0.051
Texas						
Metropolitan	1,468,551	99.81	2,062	1.39+	36.6	0.051
Rural	1,021,156	99.73	1,524	1.47+	41.4	0.061
	447,395	99.97	538	1.21	23.4	0.029
West						
Metropolitan	4,539,951	93.08	7,491	1.61+	32.1	0.053
Rural	3,642,859	91.96	6,109	1.65+	31.5	0.054
	897,092	97.88	1,382	1.45+	34.5	0.051
Mountain						
Metropolitan	1,200,638	94.36	1,960	1.57+	35.4	0.057
Rural	720,893	92.10	1,184	1.59+	40.7	0.067
	479,745	97.98	776	1.53+	27.2	0.042
Montana						
Metropolitan	97,248	99.90	283	2.82+	30.1	0.091
Rural	21,173	99.90	41	1.88	45.9	0.094
	76,075	99.91	242	3.08+	27.4	0.091
Idaho						
Metropolitan	109,822	99.77	143	1.25	14.3	0.018
Rural	18,471	99.90	26	1.37	36.4	0.054
	91,351	99.74	117	1.22	8.9-	0.010-
Wyoming						
Metropolitan	42,408	99.91	56	1.29	56.5	0.070
Rural	12,265	99.93	16	1.27	65.3	0.081
	30,143	99.89	40	1.29	53.0	0.066
Colorado						
Metropolitan	266,663	94.73	309	1.15	30.0	0.033
Rural	201,737	95.23	241	1.19	30.3	0.035
	64,926	93.22	68	1.03	29.3	0.030

See notes at end of table.



Table 2. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	174	1.34	32.3	0.047
Metropolitan	51,612	85.86	91	1.71	48.9	0.096
Rural	73,759	97.76	83	1.08	11.9	0.013-
Arizona	348,748	91.33	619	1.68+	39.1	0.067
Metropolitan	257,931	89.11	483	1.81+	45.2	0.084
Rural	90,817	98.31	136	1.34	15.6	0.021
Utah	128,579	99.92	214	1.61	52.1	0.092
Metropolitan	93,319	99.94	159	1.65	50.4	0.095
Rural	35,260	99.88	55	1.50	58.0	0.083
Nevada	81,799	86.15	162	1.76	32.3	0.059
Metropolitan	64,385	84.73	127	1.76	16.8	0.030
Rural	17,414	91.83	35	1.79	83.4	0.164
Pacific	3,339,313	92.62	5,531	1.63+	30.9-	0.052
Metropolitan	2,921,966	91.93	4,925	1.67+	29.4-	0.051
Rural	417,347	97.77	606	1.36	44.0	0.061
Washington	461,706	92.41	628	1.34	31.2	0.043
Metropolitan	346,977	90.86	487	1.39	34.0	0.049
Rural	114,729	97.42	141	1.17	21.2	0.026
Oregon	303,778	86.84	353	1.15	47.8	0.052
Metropolitan	181,677	80.38	197	1.11	47.1	0.050
Rural	122,101	98.65	156	1.20	48.7	0.056
California	2,477,248	93.71	4,431	1.77+	29.3-	0.054
Metropolitan	2,330,007	93.36	4,149	1.77+	28.2-	0.052
Rural	147,241	99.57	282	1.79+	46.4	0.086
Alaska	16,348	99.78	9	0.48-	0.0	0.000
Metropolitan	5,625	99.75	1	0.15-	0.0	0.000
Rural	10,723	99.80	8	0.66	0.0	0.000
Hawaii	80,233	83.64	110	1.24	46.2	0.059
Metropolitan	57,680	83.31	91	1.42	22.5	0.033
Rural	22,553	84.47	19	0.77	156.6	0.126

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	33,958	1.27	37.8	0.049
Northeast	6,276,897	98.04	4,592	0.74-	32.8	0.023-
New England	1,569,313	96.20	1,081	0.70-	34.9	0.025-
Maine	153,209	99.88	79	0.52-	14.0	0.006
Bangor, ME	16,035	99.87	6	0.38-	0.0	0.000
Lewiston-Auburn, ME	13,464	99.93	11	0.84	0.0	0.000
Portland, ME	52,846	99.89	32	0.62-	0.0	0.000
New Hampshire	114,752	98.98	62	0.54-	16.5	0.008
Manchester, NH	44,397	97.91	28	0.65-	0.0	0.000
Portsmouth, NH	29,738	99.52	18	0.60-	0.0	0.000
Vermont	62,781	99.82	33	0.53-	92.5	0.048
Burlington, VT	10,422	99.91	6	0.59	142.3	0.098
Massachusetts	709,478	93.75	500	0.73-	40.3	0.030
Boston, MA	429,794	95.67	331	0.81-	53.5	0.046
New Bedford, MA	65,540	98.67	38	0.58-	0.0	0.000
Pittsfield, MA	20,281	91.00	7	0.36-	0.0	0.000
Springfield, MA	72,225	92.57	49	0.70-	21.4	0.013
Worcester, MA	71,185	79.42	31	0.46-	0.0	0.000
Rhode Island	132,332	97.59	83	0.64-	0.0	0.000
Providence, RI	132,332	97.59	83	0.64-	0.0	0.000
Connecticut	396,761	97.56	324	0.82-	37.2	0.031
Bridgeport, CT	96,911	96.63	123	1.27	49.5	0.062
Hartford, CT	157,139	99.16	69	0.44-	14.9	0.006
New Haven, CT	102,964	95.31	116	1.14	41.9	0.049
New London, CT	27,613	99.70	12	0.43-	0.0	0.000

See notes at end of table.



Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 post-admission deaths
Middle Atlantic	4,707,584	98.68	3,511	0.75-	32.1	0.023-	
New York	2,143,249	98.98	1,126	0.54-	23.8-	0.012-	
Albany, NY	115,122	98.78	31	0.27-	31.5	0.008	
Binghamton, NY	35,576	99.96	41	1.16	26.5	0.029	
Buffalo, NY	134,451	98.66	59	0.44-	0.0	0.000	
Elmira, NY	13,699	99.94	11	0.81	103.4	0.074	
Glens Falls, NY	15,222	99.63	4	0.26-	0.0	0.000	
Nassau-Suffolk, NY	297,143	99.88	179	0.59-	18.0	0.010-	
New York, NY	997,473	99.58	522	0.55-	32.6	0.018-	
Niagara Falls, NY	30,841	99.69	10	0.31-	0.0	0.000	
Orange County, NY	30,488	99.89	10	0.33-	0.0	0.000	
Poughkeepsie, NY	27,864	98.47	14	0.51-	0.0	0.000	
Rochester, NY	102,542	88.80	60	0.60-	17.7	0.009	
Syracuse, NY	75,217	99.92	30	0.40-	0.0	0.000	
Utica-Rome, NY	46,733	99.90	25	0.53-	0.0	0.000	
New Jersey	916,155	97.84	672	0.73-	29.3	0.020-	
Atlantic City, NJ	46,406	97.93	38	0.83	0.0	0.000	
Bergen-Passaic, NJ	171,246	99.45	132	0.76-	39.8	0.029	
Jersey City, NJ	64,069	99.25	37	0.58-	29.6	0.015	
Middlesex, NJ	91,009	94.70	98	1.02	20.3	0.021	
Monmouth-Ocean, NJ	154,643	99.57	107	0.68-	19.0	0.012-	
Newark, NJ	211,511	99.40	148	0.70-	35.3	0.024	
Trenton, NJ	38,499	97.14	35	0.90	0.0	0.000	
Vineland, NJ	16,382	96.17	7	0.42-	0.0	0.000	
Pennsylvania	1,648,180	98.75	1,713	1.03-	38.6	0.039	
Allentown, PA-NJ	94,668	99.09	90	0.93	58.1	0.052	
Altoona, PA	20,692	99.99	2	0.10-	0.0	0.000	
Beaver County, PA	27,562	99.95	17	0.58-	0.0	0.000	
Erie, PA	35,244	99.92	38	1.04	51.2	0.056	
Harrisburg, PA	72,929	99.95	73	0.99	56.8	0.055	
Johnstown, PA	40,260	99.97	12	0.29-	0.0	0.000	
Lancaster, PA	48,045	99.93	126	2.67+	44.3	0.127	
Philadelphia PA-NJ	569,054	95.81	592	1.05-	30.3	0.032	
Pittsburgh, PA	323,494	99.06	337	1.02-	51.7	0.052	
Reading, PA	48,476	99.88	125	2.57+	50.9	0.124	
Scranton, PA	122,888	99.95	89	0.72-	11.3	0.008	
Sharon, PA	19,009	99.97	28	1.44	38.5	0.052	
State College, PA	10,032	99.97	1	0.10-	0.0	0.000	
Williamsport, PA	16,877	99.98	18	1.08	59.4	0.060	
York, PA	48,541	99.96	25	0.51-	0.0	0.000	

See notes at end of table.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	10,249	1.50+	42.3	0.064+
East North Central	4,745,430	97.76	6,442	1.36+	37.1	0.051+
Ohio	1,263,869	99.46	1,544	1.21	35.2	0.042
Akron, OH	75,615	99.90	111	1.45	51.3	0.080
Canton, OH	51,895	99.97	42	0.79-	0.0	0.000
Cincinnati, OH-KY-IN	159,407	99.96	150	0.96-	19.9	0.018-
Cleveland, OH	242,585	99.71	224	0.91-	28.1	0.024
Columbus, OH	121,377	99.73	226	1.87+	33.9	0.066
Dayton, OH	103,547	99.95	143	1.36	64.7	0.087
Hamilton, OH	26,009	99.95	50	1.92	42.0	0.077
Lima, OH	19,579	99.97	23	1.18	0.0	0.000
Lorain-Elyria, OH	27,340	99.85	58	2.02	77.3	0.145
Mansfield, OH	15,230	99.96	15	0.96	77.9	0.065
Steubenville, OH-WV	21,934	98.57	45	1.97	0.0	0.000
Toledo, OH	70,660	99.95	41	0.59-	0.0	0.000
Youngstown, OH	69,319	99.95	111	1.53	19.1	0.028
Indiana	623,062	97.86	972	1.56+	39.5	0.061
Anderson, IN	17,198	99.83	31	1.80	32.2	0.059
Bloomington, IN	7,913	99.87	11	1.41	0.0	0.000
Elkhart-Goshen, IN	15,647	99.92	23	1.49	81.7	0.130
Evansville, IN-KY	34,434	95.72	54	1.60	61.9	0.089
Fort Wayne, IN	37,565	97.77	76	2.06	48.9	0.109
Gary-Hammond, IN	61,160	97.01	89	1.38	58.3	0.080
Indianapolis, IN	118,407	93.81	216	1.85+	60.9	0.112
Kokomo, IN	10,842	99.94	17	1.56	54.0	0.093
Lafayette, IN	11,228	99.92	19	1.73	0.0	0.000
Muncie, IN	13,759	99.91	17	1.24	64.4	0.073
South Bend, IN	33,170	99.93	26	0.79	0.0	0.000
Terre Haute, IN	19,585	99.89	51	2.70	0.0	0.000
Illinois	1,265,011	95.90	1,674	1.34	35.7	0.048
Aurora-Elgin, IL	30,946	98.68	46	1.52	20.6	0.033
Bloomington, IL	12,672	99.94	16	1.32	0.0	0.000
Champaign, IL	13,391	99.91	17	1.29	59.3	0.076
Chicago, IL	608,135	92.94	689	1.14	31.6	0.037
Decatur, IL	15,992	99.97	12	0.77	0.0	0.000
Joliet, IL	28,047	97.18	32	1.13	31.1	0.035
Kankakee, IL	12,020	99.94	4	0.33-	0.0	0.000
Lake County, IL	36,099	96.52	53	1.44	42.0	0.056
Peoria, IL	43,549	99.93	64	1.49	30.0	0.046
Rockford, IL	28,351	88.93	115	4.07+	42.8	0.179
Springfield, IL	24,799	99.96	45	1.89	119.3	0.208

See notes at end of table.



Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	1,375	1.38	42.6	0.060
Ann Arbor, MI	17,760	95.12	28	1.61	35.1	0.058
Battle Creek, MI	16,831	99.89	52	3.10+	82.3	0.241
Benton Harbor, MI	21,618	99.88	56	2.55	34.9	0.092
Detroit, MI	448,826	96.43	447	0.98-	38.3	0.037
Flint, MI	43,084	91.01	53	1.24	37.0	0.047
Grand Rapids, MI	64,091	95.42	89	1.42	78.7	0.112
Jackson, MI	17,046	99.82	30	1.74	35.9	0.059
Kalamazoo, MI	21,512	99.85	93	4.39+	41.1	0.190
Lansing, MI	32,460	90.23	53	1.67	38.6	0.063
Muskegon, MI	18,957	98.06	31	1.59	31.7	0.052
Saginaw, MI	42,162	96.18	56	1.30	16.5	0.023
Wisconsin	611,044	99.60	877	1.45	31.9	0.046
Appleton, WI	34,483	99.96	32	0.94	67.0	0.058
Eau Claire, WI	16,955	99.94	5	0.30-	197.8	0.059
Green Bay, WI	19,185	99.97	17	0.90	0.0	0.000
Janesville, WI	16,529	99.85	26	1.62	39.1	0.061
Kenosha, WI	14,291	99.91	27	1.89	0.0	0.000
LaCrosse, WI	11,858	99.91	20	1.77	46.2	0.087
Madison, WI	30,776	99.74	55	1.84	74.3	0.133
Milwaukee, WI	166,813	99.21	344	2.11+	22.5	0.048
Racine, WI	20,503	99.90	29	1.42	0.0	0.000
Sheboygan, WI	14,461	99.98	10	0.70	0.0	0.000
Wausau, WI	12,945	99.95	25	1.91	75.6	0.155
West North Central	2,156,545	93.50	3,807	1.84+	50.9+	0.094+
Minnesota	397,258	77.30	452	1.21	58.4	0.070
Duluth, MN-WI	29,977	76.74	23	0.79	134.4	0.104
Minneapolis, MN-WI	141,769	64.45	195	1.52	52.1	0.084
Rochester, MN	9,393	99.67	17	1.94	59.6	0.112
St. Cloud, MN	12,248	70.92	18	1.59	0.0	0.000
Iowa	404,057	99.37	783	2.02+	73.0+	0.146+
Cedar Rapids, IA	19,323	99.94	23	1.22	45.8	0.053
Davenport, IA-IL	44,646	99.94	81	1.83	60.0	0.113
Des Moines, IA	40,067	94.50	133	3.46+	58.8	0.208
Dubuque, IA	11,460	99.95	5	0.46-	0.0	0.000
Iowa City, IA	6,240	99.90	8	1.34	250.4	0.332
Sioux City, IA-NE	15,951	99.96	34	2.24	34.3	0.065
Waterloo, IA	19,521	99.96	17	0.88	240.7	0.209

See notes at end of table.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	1,354	2.13+	44.1	0.095+
Columbia, MO	8,560	99.98	13	1.56	0.0	0.000
Joplin, MO	19,275	99.95	31	1.63	34.5	0.052
Kansas City, MO-KS	154,919	95.72	518	3.46+	42.9	0.153+
St. Joseph, MO	13,630	99.97	33	2.54	0.0	0.000
St. Louis, MO-IL	283,167	97.43	395	1.44	47.6	0.069
Springfield, MO	27,676	99.94	91	3.37+	41.8	0.147
North Dakota	85,433	98.28	70	0.83-	30.8	0.023
Bismarck, ND	8,160	95.13	12	1.49	0.0	0.000
Fargo, ND-MN	14,138	96.57	12	0.89	168.3	0.147
Grand Forks, ND	5,687	99.95	8	1.46	0.0	0.000
South Dakota	96,216	99.59	102	1.09	10.3-	0.010-
Rapid City, SD	7,152	99.89	9	1.24	0.0	0.000
Sioux Falls, SD	13,275	99.93	27	2.10	0.0	0.000
Nebraska	209,910	98.52	234	1.17	38.1	0.043
Lincoln, NE	20,994	98.50	33	1.66	126.9	0.199
Omaha, NE-IA	57,609	95.39	83	1.49	48.0	0.071
Kansas	307,796	95.82	812	2.76+	47.2	0.134+
Lawrence, KS	4,965	87.78	14	2.97	0.0	0.000
Topeka, KS	18,983	97.26	69	3.86+	52.1	0.220
Wichita, KS	45,844	88.57	109	2.46+	53.4	0.135
South	8,980,101	97.94	11,626	1.28	39.5	0.050+
South Atlantic	4,668,855	96.31	5,848	1.23	36.8	0.045
Delaware	70,251	99.94	70	0.97	44.7	0.042
Wilmington, DE-NJ-MD	58,114	99.65	48	0.80-	45.4	0.034
Maryland	436,606	99.49	394	0.89-	16.1-	0.013-
Baltimore, MD	244,878	99.90	156	0.63-	27.4	0.016-
Cumberland, MD-WV	17,051	99.95	9	0.53-	0.0	0.000
Hagerstown, MD	14,522	99.95	8	0.55	0.0	0.000
District of Col.	66,196	99.75	51	0.82-	0.0	0.000
Washington, DC-MD-VA	261,121	99.05	296	1.13	14.0	0.015-

See notes at end of table.



Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	542	0.94-	20.9-	0.019-
Charlottesville, VA	12,020	99.92	18	1.50	52.8	0.084
Danville, VA	15,532	99.99	11	0.70	0.0	0.000
Lynchburg, VA	18,110	99.99	16	0.90	0.0	0.000
Norfolk, VA	102,601	99.96	108	1.02	19.4	0.019-
Richmond, VA	85,698	99.98	127	1.48	8.0-	0.011-
Roanoke, VA	30,622	99.98	21	0.71	103.3	0.067
West Virginia	244,259	98.98	260	1.06	40.1	0.040
Charleston, WV	34,215	99.96	68	1.95	47.6	0.087
Huntington, WV-KY-OH	40,891	99.95	28	0.69-	0.0	0.000
Parkersburg, WV-OH	19,888	99.94	12	0.61	0.0	0.000
Wheeling, WV-OH	22,016	82.51	14	0.65	0.0	0.000
North Carolina	689,138	99.93	699	1.00-	68.3+	0.065
Asheville, NC	24,469	99.92	13	0.54-	0.0	0.000
Burlington, NC	14,505	99.99	18	1.21	239.7	0.275
Charlotte, NC	109,337	99.79	113	1.02	76.3	0.073
Fayetteville, NC	13,388	99.98	11	0.78	86.3	0.074
Greensboro, NC	99,387	99.97	159	1.59	127.1+	0.203+
Hickory, NC	23,392	99.97	12	0.50-	0.0	0.000
Jacksonville, NC	5,134	99.86	2	0.36	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	52	0.92	40.2	0.036
Wilmington, NC	12,634	99.97	13	1.00	0.0	0.000
South Carolina	329,020	99.44	382	1.12	41.2	0.045
Anderson, SC	16,583	99.70	16	0.94	0.0	0.000
Charleston, SC	34,246	98.90	24	0.67-	87.4	0.058
Columbia, SC	35,361	99.98	49	1.34	22.3	0.028
Florence, SC	11,195	99.96	13	1.13	81.9	0.090
Greenville, SC	65,893	98.01	71	1.05	98.4	0.106
Georgia	561,716	99.71	795	1.40	23.1-	0.032
Albany, GA	9,292	99.92	6	0.63	0.0	0.000
Athens, GA	13,510	99.96	21	1.57	0.0	0.000
Atlanta, GA	189,539	99.27	332	1.75+	12.6-	0.021
Augusta, GA-SC	32,938	99.93	99	2.92+	48.7	0.152
Columbus, GA-AL	22,847	99.96	19	0.81	0.0	0.000
Macon, GA	25,929	99.97	25	0.95	0.0	0.000
Savannah, GA	25,338	99.94	23	0.89	50.9	0.039

See notes at end of table.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Florida	1,705,534	90.97	2,655	1.53+	38.6	0.060+
Bradenton, FL	42,906	99.68	41	0.96	0.0	0.000
Daytona Beach, FL	62,616	92.90	113	1.78	26.6	0.047
Fort Lauderdale, FL	181,839	81.09	451	2.59+	39.1	0.105
Fort Myers, FL	61,428	99.65	69	1.03	0.0	0.000
Fort Pierce, FL	41,198	99.28	51	1.13	22.5	0.023
FT. Walton Beach, FL	10,169	99.88	10	0.88	117.3	0.095
Gainesville, FL	16,758	99.58	27	1.56	36.5	0.059
Jacksonville, FL	80,895	98.22	145	1.76	26.9	0.049
Lakeland, FL	55,495	99.56	90	1.55	85.5	0.142
Melbourne, FL	46,501	99.72	88	1.73	58.8	0.103
Miami-Hialeah, FL	168,502	79.57	250	1.61	73.3	0.117+
Naples, FL	23,433	99.75	26	1.00	0.0	0.000
Ocala, FL	31,367	99.50	54	1.54	17.7	0.030
Orlando, FL	90,604	98.55	190	2.03+	74.0	0.154+
Panama City, FL	11,817	99.70	11	0.87	0.0	0.000
Pensacola, FL	29,972	99.89	60	1.91	124.8	0.232
Sarasota, FL	77,895	99.81	152	1.91+	33.2	0.063
Tallahassee, FL	17,414	97.85	24	1.37	0.0	0.000
Tampa, FL	323,951	87.05	264	0.83-	11.8-	0.009
West Palm Beach, FL	139,729	85.22	220	1.56	13.5-	0.021
East South Central	1,726,272	99.80	1,989	1.16-	52.4+	0.061+
Kentucky	422,657	99.70	327	0.78-	25.8	0.018-
Lexington, KY	31,008	98.87	19	0.62-	0.0	0.000
Louisville, KY-IN	107,485	99.20	98	0.92	21.3	0.018-
Owensboro, KY	10,319	99.96	14	1.36	0.0	0.000
Tennessee	550,327	99.65	649	1.18	63.7+	0.075+
Chattanooga, TN-GA	50,061	99.97	47	0.94	0.0	0.000
Clarksville, TN-KY	12,541	99.91	9	0.72	0.0	0.000
Jackson, TN	10,064	99.95	23	2.39	0.0	0.000
Johnson City, TN-VA	55,068	99.97	38	0.68-	0.0	0.000
Knoxville, TN	70,970	99.96	115	1.60	18.0	0.028
Memphis, TN-AR-MS	88,836	98.06	142	1.62	81.8	0.138
Nashville, TN	92,994	99.96	89	0.97	54.6	0.054

See notes at end of table.



Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Alabama	463,131	99.97	728	1.57+	57.5	0.093+
Anniston, AL	13,124	99.97	18	1.34	0.0	0.000
Birmingham, AL	108,546	99.98	149	1.39	78.2	0.112
Dothan, AL	12,690	99.94	34	2.65	0.0	0.000
Florence, AL	16,687	99.97	21	1.24	95.5	0.119
Gadsden, AL	14,295	99.97	17	1.16	0.0	0.000
Huntsville, AL	17,137	99.96	9	0.51-	0.0	0.000
Mobile, AL	50,513	99.96	90	1.73	56.3	0.098
Montgomery, AL	29,832	99.97	47	1.59	177.9	0.308+
Tuscaloosa, AL	13,604	99.99	59	4.39+	92.3	0.451
Mississippi	290,157	99.98	285	1.00-	42.5	0.042
Biloxi-Gulfport, MS	18,079	99.97	23	1.21	0.0	0.000
Jackson, MS	35,305	99.98	48	1.39	19.7	0.029
Pascagoula, MS	8,556	99.88	16	1.74	69.1	0.114
West South Central	2,584,974	99.74	3,789	1.46+	37.1	0.054
Arkansas	321,739	99.96	372	1.15	34.2	0.040
Fayetteville, AR	11,803	99.95	11	0.93	0.0	0.000
Fort Smith, AR-OK	21,413	99.98	12	0.56-	0.0	0.000
Little Rock, AR	50,966	99.99	60	1.18	15.8	0.019
Pine Bluff, AR	11,012	99.98	5	0.47	0.0	0.000
Louisiana	415,968	99.98	737	1.78+	32.6	0.058
Alexandria, LA	13,819	99.96	46	3.38+	105.2	0.371
Baton Rouge, LA	39,583	99.97	75	1.85	13.3	0.025
Houma-Thibodaux, LA	13,501	100.00	33	2.32	0.0	0.000
Lafayette, LA	14,620	99.99	35	2.37	0.0	0.000
Lake Charles, LA	16,436	99.98	23	1.34	0.0	0.000
Monroe, LA	14,648	99.99	6	0.42-	0.0	0.000
New Orleans, LA	118,708	99.98	244	2.06+	36.4	0.076
Shreveport, LA	36,822	99.98	70	1.96	43.1	0.084
Oklahoma	378,716	99.02	618	1.66+	45.5	0.077
Enid, OK	8,215	99.94	10	1.27	0.0	0.000
Lawton, OK	8,221	99.99	20	2.34	0.0	0.000
Oklahoma City, OK	88,646	97.45	182	2.11+	46.6	0.104
Tulsa, OK	71,032	98.13	113	1.61	84.5	0.143

See notes at end of table.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Texas	1,468,551	99.81	2,062	1.39	36.6	0.051
Abilene, TX	13,100	99.96	15	1.17	77.9	0.078
Amarillo, TX	19,063	99.97	16	0.83	0.0	0.000
Austin, TX	47,578	99.95	76	1.60	40.7	0.064
Beaumont, TX	42,323	99.98	111	2.58+	18.4	0.047
Brazoria, TX	12,486	99.78	28	2.10	0.0	0.000
Brownsville, TX	20,169	99.86	37	1.73	149.7	0.289
Bryan, TX	6,955	99.96	7	1.02	0.0	0.000
Corpus Christi, TX	28,417	95.56	55	1.87	18.0	0.035
Dallas, TX	172,118	99.95	247	1.44	48.7	0.070
El Paso, TX	37,292	99.94	40	1.01	0.0	0.000
Fort Worth, TX	97,947	99.96	56	0.57-	39.2	0.020
Galveston, TX	19,376	99.94	21	1.04	0.0	0.000
Houston, TX	187,992	99.85	314	1.63+	22.6	0.037
Killeen-Temple, TX	17,182	99.97	56	3.24+	18.2	0.059
Laredo, TX	8,421	99.99	7	0.83	0.0	0.000
Longview, TX	20,547	99.98	9	0.45-	0.0	0.000
Lubbock, TX	18,957	99.97	27	1.40	71.5	0.105
McAllen, TX	27,402	99.82	72	2.44+	173.1+	0.456+
Midland, TX	7,362	99.96	2	0.26-	0.0	0.000
Odessa, TX	9,207	99.99	11	1.12	0.0	0.000
San Angelo, TX	11,213	99.99	22	1.98	0.0	0.000
San Antonio, TX	107,989	99.28	167	1.53	51.1	0.084
Sherman-Denison, TX	14,532	99.99	20	1.40	49.9	0.069
Texarkana, TX-AR	15,315	99.99	14	0.94	76.3	0.066
Tyler, TX	18,223	99.98	7	0.38-	0.0	0.000
Victoria, TX	6,871	99.97	14	1.96	0.0	0.000
Waco, TX	23,624	99.99	55	2.38	41.3	0.086
Wichita Falls, TX	14,462	99.97	23	1.63	45.0	0.071
West	4,539,951	93.08	7,491	1.61+	32.1	0.053+
Mountain	1,200,638	94.36	1,960	1.57+	35.4	0.057
Montana	97,248	99.90	283	2.82+	30.1	0.091
Billings, MT	12,097	99.88	24	1.92	39.8	0.082
Great Falls, MT	9,076	99.91	17	1.82	54.2	0.110
Idaho	109,822	99.77	143	1.25	14.3	0.018-
Boise City, ID	18,471	99.90	26	1.37	36.4	0.054
Wyoming	42,408	99.91	56	1.29	56.5	0.070
Casper, WY	5,379	99.91	12	2.16	95.4	0.186
Cheyenne, WY	6,886	99.96	4	0.57	0.0	0.000

See notes at end of table.



Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths		
	Number	As percent of all enrollees		Number	Per 1,000 non-HMD enrollees	
Colorado	266,663	94.73	309	1.15	30.0	0.033
Boulder-Longmont, CO	15,143	97.96	22	1.49	44.7	0.068
Colorado Springs, CO	24,899	95.03	37	1.44	0.0	0.000
Denver, CO	119,624	94.10	102	0.85-	10.5-	0.008
Fort Collins, CO	15,089	99.71	35	2.31	58.9	0.133
Greeley, CO	11,610	99.62	27	2.31	72.6	0.173
Pueblo, CO	15,372	94.43	18	1.15	66.6	0.065
New Mexico	125,371	92.49	174	1.34	32.3	0.047
Albuquerque, NM	33,783	81.01	72	2.10	47.0	0.119
Las Cruces, NM	9,375	99.94	12	1.19	0.0	0.000
Santa Fe, NM	8,454	93.66	7	0.80	196.2	0.118
Arizona	348,748	91.33	619	1.68+	39.1	0.067
Phoenix, AZ	187,381	86.74	330	1.70+	38.9	0.068
Tucson, AZ	70,550	96.06	153	2.09+	59.2	0.126
Utah	128,579	99.92	214	1.61	52.1	0.092
Provo-Orem, UT	16,076	99.93	52	3.10+	32.9	0.122
Salt Lake City, UT	77,243	99.94	107	1.35	59.5	0.090
Nevada	81,799	86.15	162	1.76	32.3	0.059
Las Vegas, NV	45,252	82.98	81	1.58	13.4	0.021
Reno, NV	19,133	89.17	46	2.18	22.6	0.051
Pacific	3,339,313	92.62	5,531	1.63+	30.9-	0.052
Washington	461,706	92.41	628	1.34	31.2	0.043
Bellingham, WA	13,629	99.51	16	1.18	0.0	0.000
Bremerton, WA	15,439	96.59	10	0.63	0.0	0.000
Olympia, WA	14,254	90.98	19	1.32	48.8	0.071
Richland, WA	12,559	99.85	22	1.62	0.0	0.000
Seattle, WA	159,828	86.57	255	1.59	37.6	0.063
Spokane, WA	41,237	94.51	64	1.57	30.8	0.049
Tacoma, WA	50,245	97.24	54	1.05	37.4	0.039
Vancouver, WA	17,048	80.32	14	0.81	0.0	0.000
Yakima, WA	22,738	99.74	33	1.43	60.0	0.087
Oregon	303,778	86.84	353	1.15	47.8	0.052
Eugene, OR	28,947	88.67	36	1.21	50.6	0.069
Medford, OR	20,326	99.78	25	1.17	142.1	0.145
Portland, OR	99,155	72.79	116	1.23	36.0	0.042
Salem, OR	33,249	90.39	20	0.61-	0.0	0.000

See notes at end of table.

Table 3. Percutaneous transluminal coronary angioplasty: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	4,431	1.77+	29.3-	0.054
Anaheim-Santa Ana, CA	167,171	89.39	289	1.76+	31.9	0.055
Bakersfield, CA	44,969	99.76	99	2.07	9.8-	0.021
Chico, CA	27,102	99.09	71	2.50+	29.7	0.072
Fresno, CA	58,425	99.90	79	1.33	37.3	0.051
Los Angeles, CA	677,939	91.40	1,195	1.78+	32.3	0.060
Merced, CA	13,462	99.86	27	1.89	0.0	0.000
Modesto, CA	33,619	98.80	91	2.64+	33.2	0.089
Oakland, CA	188,258	99.08	414	2.19+	21.1	0.048
Oxnard-Ventura, CA	49,488	93.74	102	2.02	36.1	0.080
Redding, CA	17,796	99.73	38	1.97	27.3	0.054
Riverside, CA	203,246	90.92	330	1.58	8.8-	0.014-
Sacramento, CA	120,273	91.81	154	1.23	18.8	0.024
Salinas, CA	29,131	99.86	65	2.18	64.6	0.137
San Diego, CA	205,402	91.35	320	1.52	14.8-	0.024
San Francisco, CA	163,753	89.02	188	1.18	39.9	0.049
San Jose, CA	105,258	99.50	172	1.62	27.6	0.048
Santa Barbara, CA	38,021	99.70	69	1.83	87.8	0.159
Santa Cruz, CA	24,640	99.77	83	3.48+	35.1	0.124
Santa Rosa, CA	44,775	99.49	107	2.39+	37.3	0.089
Stockton, CA	40,855	91.54	118	2.81+	25.8	0.072
Vallejo, CA	35,778	98.59	86	2.35+	43.3	0.111
Visalia, CA	28,811	99.91	29	0.98	0.0	0.000
Yuba City, CA	11,835	99.35	23	1.83	0.0	0.000
Alaska	16,348	99.78	9	0.48-	0.0	0.000
Anchorage, AK	5,625	99.75	1	0.15-	0.0	0.000
Hawaii	80,233	83.64	110	1.24	46.2	0.059
Honolulu, HI	57,680	83.31	91	1.42	22.5	0.033

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



# Coronary artery bypass graft

In the last decade, coronary artery bypass graft (CABG) surgery has been increasing substantially among the aged Medicare population. The rate of CABGs increased from 0.6 procedures per 1,000 enrollees per year in 1979–80 to 2.73 procedures per 1,000 in 1986. There were 72,824 CABG operations performed on aged Medicare enrollees in 1986. The 30-day post-admission death rate per 1,000 discharges was 60.8, or about 6 percent (Table 1).

## Age and sex patterns

The rate of CABG surgery decreased substantially with age; the rate for persons aged 65–74 years was 3.63 per 1,000 enrollees compared with 1.73 per 1,000 for persons aged 75–84 years and with 0.13 per 1,000 for persons 85 years of age or over. The rate for men (4.57 per 1,000 enrollees) was more than triple that for women (1.50 per 1,000 enrollees).

As age increased, there was a notable increase in the rates of 30-day post-admission deaths per 1,000 discharges. Enrollees aged 65–74 years had a rate of 53.4 deaths per 1,000 discharges; enrollees 85 years of age or over had a rate of 165.1 deaths per 1,000 discharges. The 30-day post-admission death rate per 1,000 discharges was much higher for women than for men (78.7 deaths per 1,000 discharges versus 52.0 per 1,000).

NOTE: Coronary artery bypass graft is diagnosis-related groups 106, 107.

## Patterns by race

In 1986, black persons had a much lower rate of CABG surgery than white persons. The rate for black persons was 0.81 procedures per 1,000 enrollees, and that for white persons was 2.90 per 1,000. The rate for black persons was lower in each age-sex group. The death rate (see Volume 1) for ischemic heart disease, the condition related to indications for CABG, was only slightly lower for black persons (12.23 deaths per 1,000) than for white persons (14.92 deaths per 1,000). Black persons had a somewhat higher rate of 30-day post-admission deaths per 1,000 discharges for CABG than white persons (79.9 deaths per 1,000 discharges versus 60.3 per 1,000). Data for CABG indicate that there is a similar pattern in the differences between the rates for women and those for men and between the rates for black persons and those for white persons. Black persons had lower discharge rates than white persons but higher 30-day post-admission mortality rates per 1,000 discharges. This was also true for women compared with men. These results suggest that the patient population with regard to case-mix severity for CABG operations varies substantially across sex and race groups.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated

by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1–3 are derived from the data in these tables.

## Discharge rates

No pronounced geographic pattern in the rate of CABG surgery is evident from the data shown in Figure 1. The highest rate of CABG surgery (3.92 operations per 1,000 enrollees) was found in North Dakota, and the lowest rates of CABG were found in the District of Columbia (1.49 operations per 1,000), Alaska (1.83), Maine (1.97) and New York (1.98). Part of the low rate for the District of Columbia is probably the result of incompleteness of hospital discharge data for the District, as well as its large black population because black persons have much lower rates of CABG surgery than white persons. It is shown in Figure 2 that, with the exception of a low median rate in the Middle Atlantic Division, there was not a great deal of variation in the median rates of CABG surgery across census divisions.

## Post-admission death rates

Rates of 30-day post-admission deaths per 1,000 discharges following CABG tended to be higher in the South Central and Southwestern States (Figure 3). The lowest rate was found in South Dakota (42.1 deaths per 1,000 discharges), and the highest rates

were found in Alaska (95.9 deaths per 1,000 discharges) and Nevada (82.4 deaths per 1,000 discharges). None of the differences between these rates and the national 30-day post-admission death rate was statistically significant because of the relatively small number of cases in those States. However, Texas, with a rate of 82.0 deaths per 1,000 procedures, and New Jersey, with a rate of 77.5 deaths per 1,000 procedures, were statistically different from the national rate of 60.8.

The correlation coefficient between the rate of operations per 1,000 enrollees for CABG and the 30-day post-admission death rate per 1,000 enrollees was 0.38, which indicates a positive but rather weak relation between the two rates.

## Urban-rural patterns

In the United States as a whole, the discharge rate and the 30-day post-admission death rate for coronary artery bypass were a little lower for rural areas than for all the MSAs combined. This pattern held true for each of the U.S. census regions.



Table 1. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

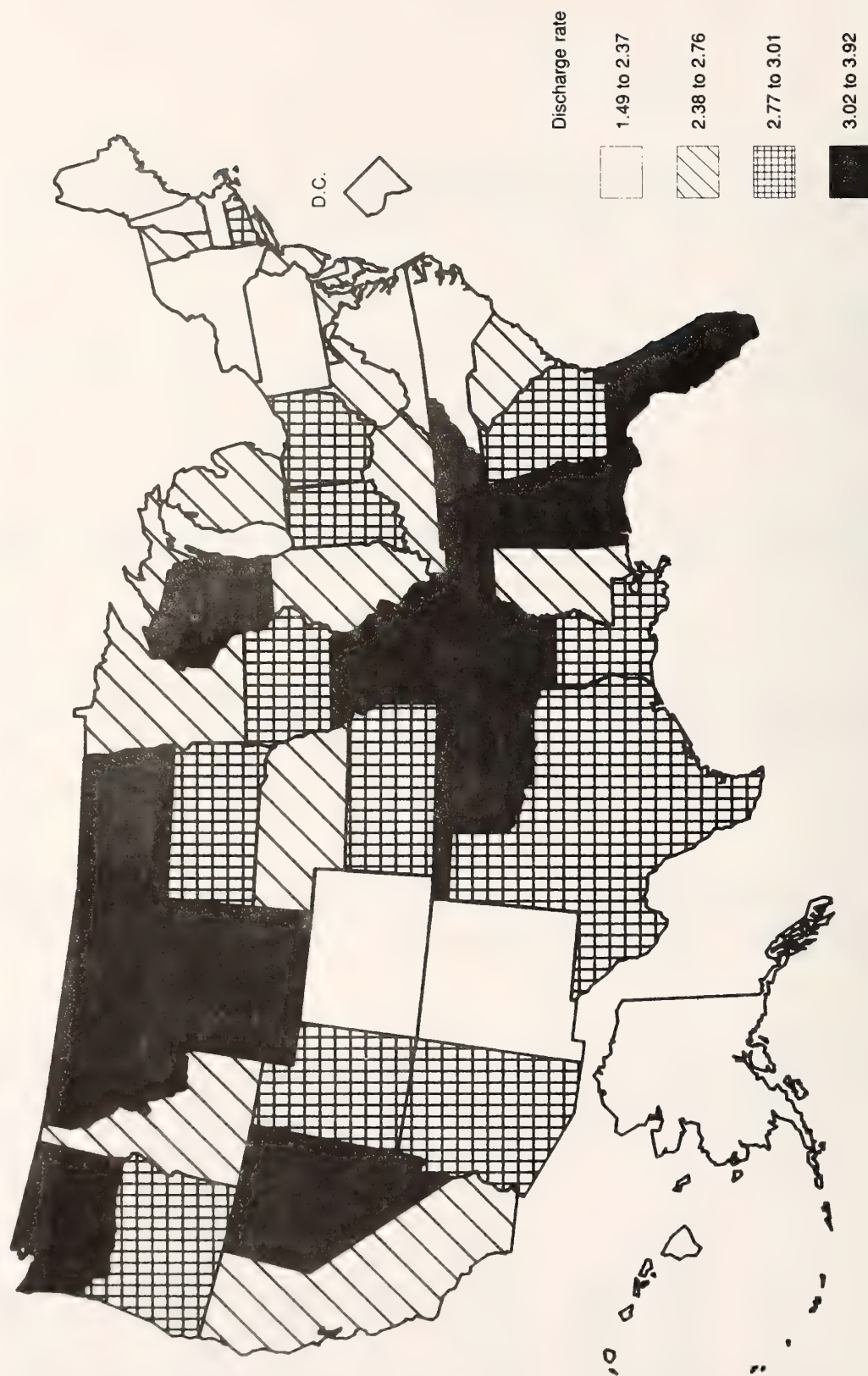
Age, sex, and race	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
All persons (1)	26,698,924	96.70	72,824	2.73	60.8	0.165
65-74 years	16,162,594	96.33	58,624	3.63	53.4	0.193
75-84 years	8,020,447	96.96	13,879	1.73	89.6	0.155
85 years or over	2,515,883	98.32	321	0.13	165.1	0.021
Men	10,650,991	96.01	48,718	4.57	52.0	0.237
65-74 years	7,056,445	95.90	40,249	5.70	45.5	0.259
75-84 years	2,912,366	96.02	8,300	2.85	81.2	0.231
85 years or over	682,180	97.22	169	0.25	159.8	0.039
Women	16,047,933	97.16	24,106	1.50	78.7	0.118
65-74 years	9,106,149	96.66	18,375	2.02	70.9	0.142
75-84 years	5,108,081	97.51	5,579	1.09	102.2	0.111
85 years or over	1,833,703	98.74	152	0.08	171.1	0.014
White	23,574,066	96.62	68,287	2.90	60.3	0.174
65-74 years	14,207,064	96.23	54,858	3.86	53.0	0.204
75-84 years	7,134,499	96.88	13,116	1.84	88.4	0.162
85 years or over	2,232,503	98.26	313	0.14	162.9	0.022
Men	9,391,016	95.94	45,998	4.90	51.8	0.253
65-74 years	6,216,472	95.83	37,939	6.10	45.3	0.276
75-84 years	2,573,989	95.94	7,895	3.07	80.6	0.247
85 years or over	600,555	97.12	164	0.27	152.4	0.041
Women	14,183,050	97.07	22,289	1.57	78.0	0.122
65-74 years	7,990,592	96.55	16,919	2.12	70.3	0.148
75-84 years	4,560,510	97.42	5,221	1.14	100.4	0.114
85 years or over	1,631,948	98.69	149	0.09	174.5	0.015
Black	1,991,943	97.86	1,614	0.81	79.9	0.064
65-74 years	1,213,014	97.54	1,324	1.09	70.2	0.076
75-84 years	583,429	98.11	286	0.49	125.9	0.061
85 years or over	195,500	99.11	4	0.02	0.0	0.000
Men	792,788	97.49	795	1.00	61.6	0.061
65-74 years	519,305	97.28	681	1.31	55.8	0.073
75-84 years	215,401	97.67	111	0.52	99.1	0.051
85 years or over	58,082	98.74	3	0.05	0.0	0.000
Women	1,199,155	98.10	819	0.68	97.7	0.066
65-74 years	693,709	97.74	643	0.93	85.5	0.079
75-84 years	368,028	98.37	175	0.48	142.9	0.067
85 years or over	137,418	99.26	1	0.01	0.0	0.000

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

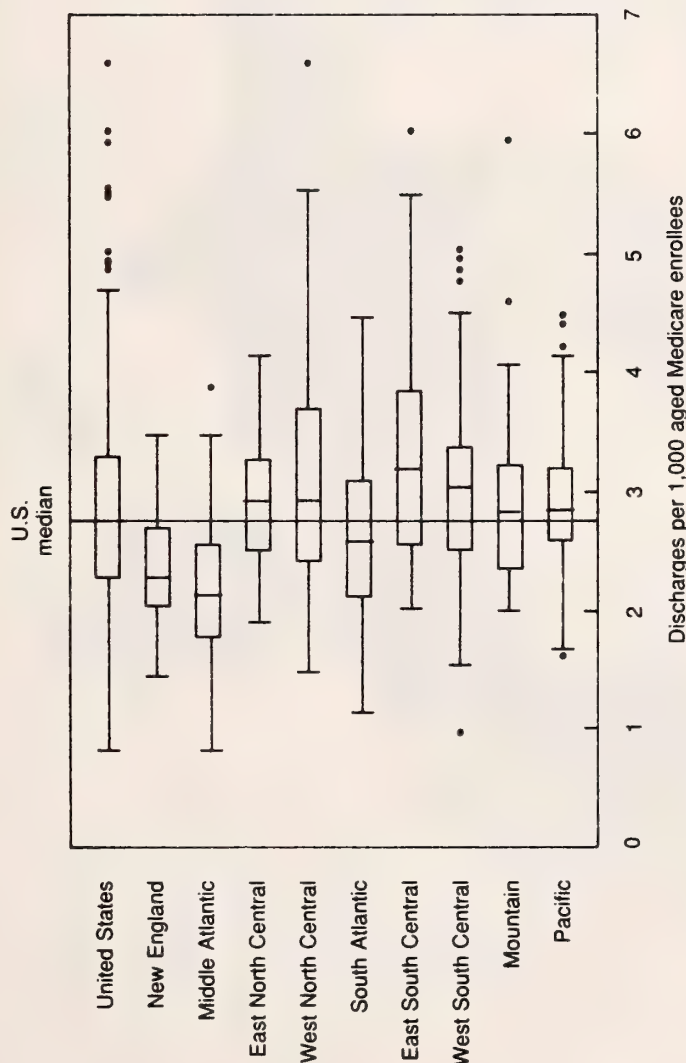
Figure 1. Coronary artery bypass graft: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



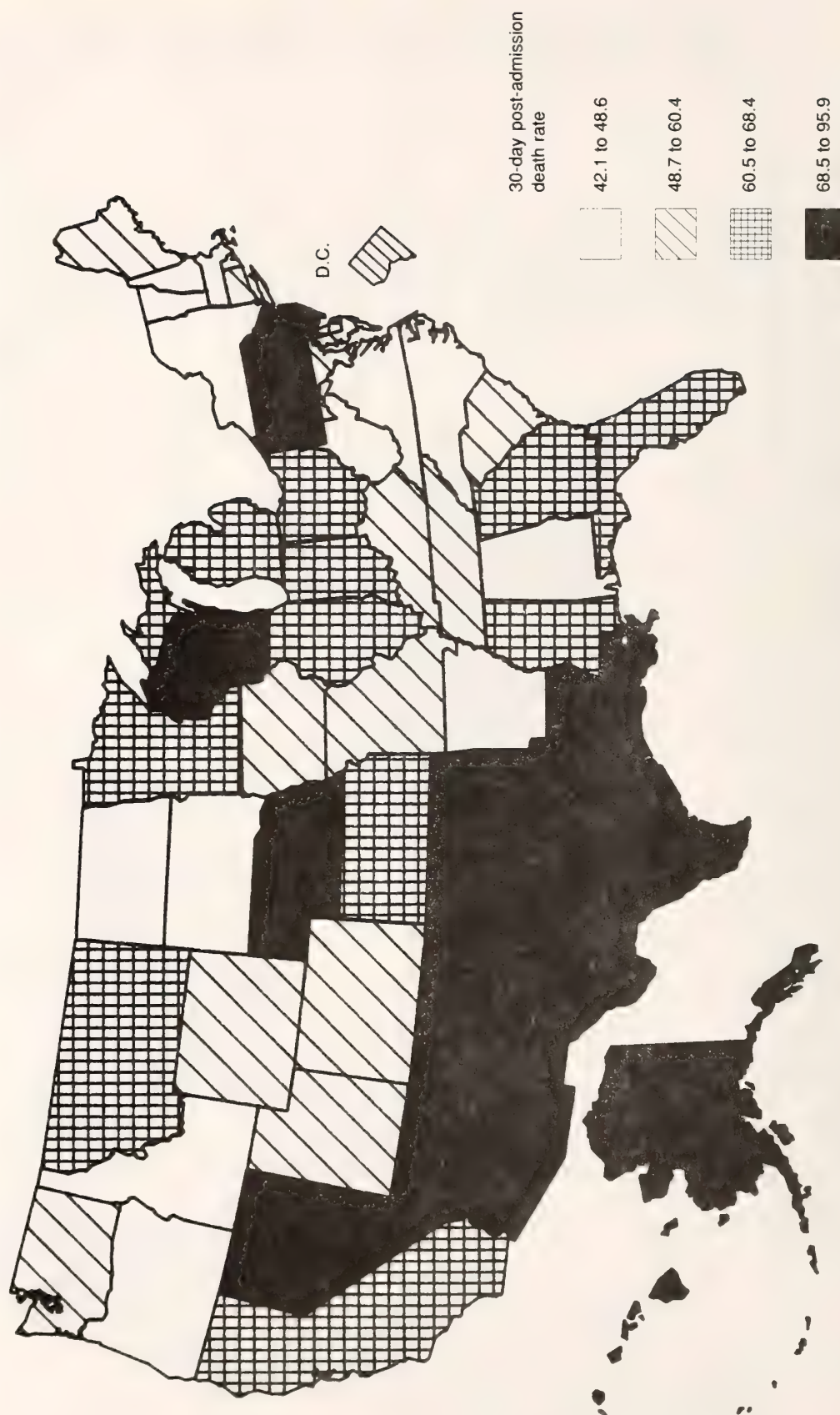
**Figure 2. Coronary artery bypass graft: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Odessa, TX	4.86
	Tuscaloosa, AL	4.94
	Little Rock, AR	4.97
	San Angelo, TX	5.04
	Gadsden, AL	5.46
	Bismarck, ND	5.47
	Florence, AL	5.48
	Columbia, MO	5.52
	Casper, WY	5.94
	Dothan, AL	6.02
Middle Atlantic	Cedar Rapids, IA	6.60
	Lancaster, PA	3.88
West North Central	Cedar Rapids, IA	6.60
East South Central	Dothan, AL	6.02
West South Central	Laredo, TX	0.94
	Houma-Thibodaux, LA	4.77
	Odessa, TX	4.86
	Little Rock, AR	4.97
	San Angelo, TX	5.04
Mountain	Great Falls, MT	4.58
	Casper, WY	5.94
Pacific	Rural counties, HI	1.64
	Bellingham, WA	4.24
	Tacoma, WA	4.42
	Olympia, WA	4.49

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 3. Coronary artery bypass graft: Thirty-day post-admission deaths per 1,000 aged Medicare short-stay hospital discharges, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
United States	26,698,924	96.70	72,824	2.73	60.8	0.165
Metropolitan	19,363,284	95.80	53,017	2.75	62.4	0.171
Rural	7,335,640	99.16	19,807	2.67	56.5	0.149-
Northeast	6,276,897	98.04	13,705	2.22-	57.4	0.126-
Metropolitan	5,564,648	97.84	12,243	2.24-	59.5	0.131-
Rural	712,249	99.69	1,462	2.04-	40.0-	0.080-
New England	1,569,313	96.20	3,596	2.35-	49.5-	0.114-
Metropolitan	1,342,886	95.66	3,108	2.39-	53.5	0.125-
Rural	226,427	99.53	488	2.15-	23.2-	0.048-
Maine	153,209	99.88	299	1.97-	58.6	0.111
Metropolitan	82,345	99.89	172	2.14	81.3	0.172
Rural	70,864	99.87	127	1.79-	25.4	0.042-
New Hampshire	114,752	98.98	229	2.00-	47.3	0.095
Metropolitan	74,135	98.55	145	1.98-	69.9	0.135
Rural	40,617	99.77	84	2.03	11.2-	0.024-
Vermont	62,781	99.82	163	2.62	43.3	0.112
Metropolitan	10,422	99.91	35	3.46	56.9	0.194
Rural	52,359	99.80	128	2.45	39.5	0.096
Massachusetts	709,478	93.75	1,452	2.15-	46.2-	0.096-
Metropolitan	659,025	93.40	1,334	2.14-	49.3	0.101-
Rural	50,453	98.58	118	2.31	9.2-	0.019-
Rhode Island	132,332	97.59	290	2.25	42.7	0.091-
Metropolitan	132,332	97.59	290	2.25	42.7	0.091-
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	1,163	2.94	54.1	0.161
Metropolitan	384,627	97.50	1,132	2.95	54.7	0.163
Rural	12,134	99.66	31	2.59	32.0	0.083
Middle Atlantic	4,707,584	98.68	10,109	2.17-	60.3	0.129-
Metropolitan	4,221,762	98.55	9,135	2.19-	61.5	0.134-
Rural	485,822	99.76	974	1.98-	48.3	0.093-
New York	2,143,249	98.98	4,127	1.98-	43.0-	0.083-
Metropolitan	1,922,371	98.89	3,693	1.98-	44.0-	0.085-
Rural	220,878	99.75	434	1.97-	33.6-	0.063-

See notes at end of table.

Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	2,207	2.39-	77.5+	0.183
Metropolitan	916,155	97.84	2,207	2.39-	77.5+	0.183
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	3,775	2.28-	69.1	0.157
Metropolitan	1,383,236	98.56	3,235	2.34-	70.6	0.165
Rural	264,944	99.78	540	2.00-	59.7	0.118
North Central	6,901,975	96.39	19,826	2.91+	62.4	0.181+
Metropolitan	4,398,761	95.22	12,787	2.95+	64.8	0.191+
Rural	2,503,214	98.51	7,039	2.85	58.0	0.164
East North Central	4,745,430	97.76	13,453	2.84+	63.7	0.181
Metropolitan	3,453,558	97.13	9,902	2.88+	64.6	0.187+
Rural	1,291,872	99.47	3,551	2.74	61.1	0.166
Ohio	1,263,869	99.46	3,614	2.85	63.2	0.178
Metropolitan	987,528	99.60	2,881	2.91	65.6	0.189
Rural	276,341	98.95	733	2.64	53.6	0.141
Indiana	623,062	97.86	1,832	2.96	64.3	0.190
Metropolitan	399,457	97.01	1,212	3.05	63.7	0.197
Rural	223,605	99.41	620	2.78	65.3	0.178
Illinois	1,265,011	95.90	3,388	2.72	60.5	0.166
Metropolitan	952,934	94.73	2,569	2.73	63.5	0.176
Rural	312,077	99.68	819	2.70	51.0	0.136
Michigan	982,444	96.86	2,745	2.75	62.7	0.173
Metropolitan	744,347	96.06	2,037	2.72	60.6	0.165
Rural	238,097	99.44	708	2.84	68.9	0.196
Wisconsin	611,044	99.60	1,874	3.09+	71.0	0.221+
Metropolitan	369,292	99.43	1,203	3.33+	71.7	0.244+
Rural	241,752	99.86	671	2.74	69.6	0.189
West North Central	2,156,545	93.50	6,373	3.08+	59.7	0.183
Metropolitan	945,203	88.82	2,885	3.22+	65.4	0.210+
Rural	1,211,342	97.51	3,488	2.97+	54.9	0.161
Minnesota	397,258	77.30	1,020	2.73	65.3	0.173
Metropolitan	187,915	67.07	444	2.62	75.3	0.192
Rural	209,343	89.55	576	2.83	57.3	0.155

See notes at end of table.



Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa	404,057	99.37	1,116	2.87	53.8	0.154
Metropolitan	136,818	98.24	426	3.23	71.8	0.238
Rural	267,239	99.96	690	2.69	42.1	0.111-
Missouri	555,875	98.17	2,231	3.51+	57.9	0.207
Metropolitan	383,255	96.99	1,258	3.44+	58.9	0.204
Rural	272,620	99.88	973	3.62+	56.7	0.210
North Dakota	85,433	98.28	334	3.92+	48.1	0.188
Metropolitan	22,964	98.14	100	4.49+	49.1	0.222
Rural	62,469	98.34	234	3.72+	47.7	0.176
South Dakota	96,216	99.59	263	2.80	42.1	0.116
Metropolitan	20,427	99.92	49	2.43	22.7	0.049
Rural	75,789	99.51	214	2.90	46.1	0.134
Nebraska	209,910	98.52	524	2.62	71.2	0.176
Metropolitan	70,076	95.86	203	3.04	87.0	0.249
Rural	139,834	99.91	321	2.41	61.3	0.139
Kansas	307,796	95.82	885	3.01	68.4	0.204
Metropolitan	123,748	93.24	405	3.37	66.7	0.222
Rural	184,048	97.63	480	2.77	69.8	0.190
South	8,980,101	97.94	26,132	2.89+	60.5	0.175
Metropolitan	5,757,016	96.87	17,363	3.00+	62.8	0.189+
Rural	3,223,085	99.91	8,769	2.69	55.8	0.149
South Atlantic	4,668,855	96.31	12,891	2.72	56.2	0.152
Metropolitan	3,313,125	94.94	9,545	2.86+	59.0	0.167
Rural	1,355,730	99.84	3,346	2.40-	48.1-	0.113-
Delaware	70,251	99.94	172	2.37	63.4	0.154
Metropolitan	44,355	99.95	120	2.65	65.0	0.178
Rural	25,896	99.94	52	1.91	59.7	0.112
Maryland	436,606	99.49	1,111	2.51	50.9	0.129
Metropolitan	395,091	99.44	1,022	2.55	52.2	0.135
Rural	41,515	99.95	89	2.10	35.6	0.071
District of Col.	66,196	99.75	92	1.49-	57.3	0.094
Metropolitan	66,196	99.75	92	1.49-	57.3	0.094
Rural	0	0.00	0	0.00	0.0	0.000

See notes at end of table.

Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia						
Metropolitan	566,135	99.91	1,256	2.19-	46.7	0.101-
Rural	355,193	99.87	870	2.42	49.9	0.120
	210,942	99.97	386	1.79-	39.5	0.070-
West Virginia						
Metropolitan	244,259	98.98	588	2.40	45.6	0.109-
Rural	90,704	97.39	241	2.66	40.9	0.110
	153,555	99.95	347	2.24-	49.0	0.109
North Carolina						
Metropolitan	689,138	99.93	1,588	2.27-	46.8-	0.104-
Rural	346,905	99.89	797	2.28-	53.5	0.120
	342,233	99.96	791	2.26-	40.0-	0.088-
South Carolina						
Metropolitan	329,020	99.44	906	2.67	51.9	0.136
Rural	186,873	99.05	563	2.93	62.7	0.183
	142,147	99.95	343	2.34	33.5-	0.075-
Georgia						
Metropolitan	561,716	99.71	1,648	2.92	62.8	0.184
Rural	313,319	99.54	934	2.98	65.1	0.196
	248,397	99.93	714	2.86	59.7	0.167
Florida						
Metropolitan	1,705,534	90.97	5,530	3.18+	61.8	0.195+
Rural	1,514,489	90.04	4,906	3.21+	62.2	0.198+
	191,045	99.17	624	2.98	58.6	0.174
East South Central						
Metropolitan	1,726,272	99.80	5,463	3.18+	51.7-	0.165
Rural	873,594	99.64	2,934	3.38+	51.7	0.177
	852,678	99.97	2,529	2.98+	51.7	0.153
Kentucky						
Metropolitan	422,657	99.70	1,083	2.57	49.4	0.127
Rural	183,264	99.37	478	2.66	54.8	0.148
	239,393	99.96	605	2.51	44.9	0.111
Tennessee						
Metropolitan	550,327	99.65	1,935	3.52+	52.6	0.184
Rural	342,007	99.46	1,179	3.48+	50.6	0.175
	208,320	99.96	756	3.59+	55.6	0.199
Alabama						
Metropolitan	463,131	99.97	1,702	3.68+	46.0-	0.173
Rural	281,960	99.97	1,087	3.85+	45.9	0.183
	181,171	99.97	615	3.42+	46.4	0.160
Mississippi						
Metropolitan	290,157	99.98	743	2.61	66.8	0.169
Rural	66,363	99.96	190	2.83	87.2	0.239
	223,794	99.98	553	2.55	60.0	0.149

See notes at end of table.

Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central Metropolitan Rural	2,584,974	99.74	7,778	3.00+	73.5+	0.221+
	1,570,297	99.59	4,884	3.09+	76.6+	0.239+
	1,014,677	99.97	2,894	2.86	68.2	0.194
Arkansas Metropolitan Rural	321,739	99.96	1,225	3.78+	48.6	0.185
	100,966	99.98	395	3.95+	52.5	0.207
	220,773	99.95	830	3.70+	46.7	0.174
Louisiana Metropolitan Rural	415,968	99.98	1,225	2.96	73.0	0.217
	268,137	99.98	886	3.31+	79.5	0.268+
	147,831	99.99	339	2.32	54.9	0.122
Oklahoma Metropolitan Rural	378,716	99.02	1,154	3.11+	70.0	0.218
	180,038	98.00	562	3.19	59.8	0.190
	198,678	99.96	592	3.03	79.6	0.242
Texas Metropolitan Rural	1,468,551	99.81	4,174	2.81	82.0+	0.231+
	1,021,156	99.73	3,041	2.93	82.0+	0.242+
	447,395	99.97	1,133	2.53	81.8	0.204
West Metropolitan Rural	4,539,951	93.08	13,161	2.82	62.7	0.177
	3,642,859	91.96	10,624	2.87+	62.3	0.179
	897,092	97.88	2,537	2.63	64.5	0.169
Mountain Metropolitan Rural	1,200,638	94.36	3,456	2.74	66.2	0.179
	720,893	92.10	2,165	2.90	60.8	0.173
	479,745	97.98	1,291	2.52	75.3	0.188
Montana Metropolitan Rural	97,248	99.90	342	3.37	66.7	0.232
	21,173	99.90	81	3.69	25.5	0.092
	76,075	99.91	261	3.28	78.8	0.271
Idaho Metropolitan Rural	109,822	99.77	302	2.60	47.8	0.115
	18,471	99.90	56	2.94	19.0	0.053
	91,351	99.74	246	2.53	54.7	0.127
Wyoming Metropolitan Rural	42,408	99.91	140	3.19	51.8	0.163
	12,265	99.93	54	4.28	18.4	0.080
	30,143	99.89	86	2.75	74.2	0.196
Colorado Metropolitan Rural	266,663	94.73	628	2.33-	60.4	0.138
	201,737	95.23	485	2.40	56.1	0.128
	64,926	93.22	143	2.14	74.0	0.167

See notes at end of table.



Table 2. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Mexico	125,371	92.49	308	2.35	73.4	0.171
Metropolitan	51,612	85.86	126	2.37	64.4	0.153
Rural	73,759	97.76	182	2.34	79.8	0.184
Arizona	348,748	91.33	1,055	2.84	75.5	0.215
Metropolitan	257,931	89.11	826	3.08	74.1	0.226
Rural	90,817	98.31	229	2.21	80.9	0.185
Utah	128,579	99.92	398	2.98	51.0	0.143
Metropolitan	93,319	99.94	298	3.09	50.2	0.147
Rural	35,260	99.88	100	2.69	53.4	0.136
Nevada	81,799	86.15	283	3.04	82.4	0.251
Metropolitan	64,385	84.73	239	3.26	66.5	0.217
Rural	17,414	91.63	44	2.20	169.0	0.374
Pacific	3,339,313	92.62	9,705	2.85+	61.5	0.177
Metropolitan	2,921,966	91.93	8,459	2.86+	62.6	0.182
Rural	417,347	97.77	1,246	2.75	53.2	0.144
Washington	461,706	92.41	1,668	3.53+	57.4	0.203
Metropolitan	346,977	90.86	1,283	3.66+	59.0	0.221
Rural	114,729	97.42	385	3.16	51.4	0.152
Oregon	303,778	86.84	869	2.80	45.1	0.124
Metropolitan	181,677	80.38	511	2.87	60.3	0.168
Rural	122,101	98.65	358	2.71	23.2-	0.063-
California	2,477,248	93.71	6,943	2.76	63.8	0.178
Metropolitan	2,330,007	93.36	6,506	2.77	63.1	0.177
Rural	147,241	99.57	437	2.72	74.8	0.208
Alaska	16,348	99.78	35	1.83	95.9	0.170
Metropolitan	5,625	99.75	11	1.67	94.6	0.163
Rural	10,723	99.80	24	1.92	96.6	0.173
Hawaii	80,233	83.64	190	2.08-	80.7	0.164
Metropolitan	57,680	83.31	148	2.26	83.1	0.179
Rural	22,553	84.47	42	1.64-	73.1	0.125

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	72,824	2.73	60.8	0.165
Northeast	6,276,897	98.04	13,705	2.22-	57.4	0.126-
New England	1,569,313	96.20	3,596	2.35-	49.5-	0.114-
Maine	153,209	99.88	299	1.97-	58.6	0.111
Bangor, ME	16,035	99.87	35	2.20	87.7	0.189
Lewiston-Auburn, ME	13,464	99.93	35	2.70	65.1	0.151
Portland, ME	52,846	99.89	102	1.97-	83.9	0.172
New Hampshire	114,752	98.98	229	2.00-	47.3	0.095
Manchester, NH	44,397	97.91	97	2.25	72.9	0.160
Portsmouth, NH	29,738	99.52	48	1.60-	63.9	0.100
Vermont	62,781	99.82	163	2.62	43.3	0.112
Burlington, VT	10,422	99.91	35	3.46	56.9	0.194
Massachusetts	709,478	93.75	1,452	2.15-	46.2-	0.096-
Boston, MA	429,794	95.67	859	2.13-	48.9	0.101-
New Bedford, MA	65,540	98.67	137	2.12	21.1-	0.045-
Pittsfield, MA	20,281	91.00	28	1.43-	70.3	0.100
Springfield, MA	72,225	92.57	136	1.94-	84.4	0.155
Worcester, MA	71,185	79.42	174	2.62	44.0	0.102
Rhode Island	132,332	97.59	290	2.25	42.7	0.091-
Providence, RI	132,332	97.59	290	2.25	42.7	0.091-
Connecticut	396,761	97.56	1,163	2.94	54.1	0.161
Bridgeport, CT	96,911	96.63	260	2.70	75.4	0.207
Hartford, CT	157,139	99.16	489	3.10	47.8	0.152
New Haven, CT	102,964	95.31	297	2.93	45.6	0.136
New London, CT	27,613	99.70	86	3.05	63.7	0.180

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	10,109	2.17-	60.3	0.129-
New York	2,143,249	98.98	4,127	1.98-	43.0-	0.083-
Albany, NY	115,122	98.78	207	1.84-	24.2-	0.043-
Binghamton, NY	35,576	99.96	85	2.42	49.7	0.113
Buffalo, NY	134,451	98.66	273	2.03-	51.3	0.104
Elmira, NY	13,699	99.94	33	2.43	31.0	0.073
Glens Falls, NY	15,222	99.63	12	0.80-	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	770	2.53	45.0	0.110-
New York, NY	997,473	99.58	1,652	1.77-	45.6-	0.080-
Niagara Falls, NY	30,841	99.69	93	2.92	33.6	0.095
Orange County, NY	30,488	99.89	28	0.93-	38.6	0.032-
Poughkeepsie, NY	27,864	98.47	32	1.18-	93.2	0.108
Rochester, NY	102,542	88.80	279	2.82	34.0	0.099
Syracuse, NY	75,217	99.92	131	1.74-	34.8	0.053-
Utica-Rome, NY	46,733	99.90	98	2.10	73.2	0.150
New Jersey	916,155	97.84	2,207	2.39-	77.5+	0.183
Atlantic City, NJ	46,406	97.93	118	2.59	49.3	0.130
Bergen-Passaic, NJ	171,246	99.45	449	2.60	65.1	0.168
Jersey City, NJ	64,069	99.25	113	1.79-	71.9	0.124
Middlesex, NJ	91,009	94.70	249	2.60	72.2	0.192
Monmouth-Ocean, NJ	154,643	99.57	339	2.17-	83.9	0.178
Newark, NJ	211,511	99.40	506	2.42	71.3	0.166
Trenton, NJ	38,499	97.14	69	1.79-	113.8	0.207
Vineland, NJ	16,382	96.17	35	2.09	116.4	0.240
Pennsylvania	1,648,180	98.75	3,775	2.28-	69.1	0.157
Allentown, PA-NJ	94,668	99.09	264	2.74	46.6	0.124
Altoona, PA	20,692	99.99	27	1.33-	41.2	0.048-
Beaver County, PA	27,562	99.95	40	1.37-	111.8	0.140
Erie, PA	35,244	99.92	111	3.05	46.8	0.139
Harrisburg, PA	72,929	99.95	165	2.26	61.2	0.137
Johnstown, PA	40,260	99.97	36	0.86-	121.8	0.097
Lancaster, PA	48,045	99.93	183	3.88+	27.1-	0.105
Philadelphia, PA-NJ	569,054	95.81	1,380	2.47-	88.2+	0.217+
Pittsburgh, PA	323,494	99.06	697	2.12-	88.5	0.194
Reading, PA	48,476	99.88	168	3.46	76.0	0.245
Scranton, PA	122,888	99.95	314	2.56	46.1	0.121
Sharon, PA	19,009	99.97	35	1.80	28.8	0.051
State College, PA	10,032	99.97	21	2.05	0.0	0.000
Williamsport, PA	16,877	99.98	29	1.74	38.1	0.059
York, PA	48,541	99.96	75	1.52-	71.1	0.102

See notes at end of table.



Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	6,901,975	96.39	19,826	2.91+	62.4	0.181+
East North Central	4,745,430	97.76	13,453	2.84+	63.7	0.181+
Ohio	1,263,869	99.46	3,614	2.85	63.2	0.178
Akron, OH	75,615	99.90	287	3.77+	60.3	0.223
Canton, OH	51,895	99.97	165	3.11	43.4	0.133
Cincinnati, OH-KY-IN	159,407	99.96	407	2.63	84.6	0.222
Cleveland, OH	242,585	99.71	717	2.93	68.9	0.205
Columbus, OH	121,377	99.33	356	2.97	65.2	0.190
Dayton, OH	103,547	99.95	347	3.32	68.1	0.221
Hamilton, OH	26,009	99.95	59	2.27	66.0	0.153
Lima, OH	19,579	99.97	61	3.13	34.5	0.103
Lorain-Elyria, OH	27,340	99.85	97	3.36	84.3	0.284
Mansfield, OH	15,230	99.96	46	2.96	42.3	0.129
Steubenville, OH-WV	21,934	98.57	43	1.89	0.0	0.000
Toledo, OH	70,660	99.95	159	2.28	65.5	0.142
Youngstown, OH	69,319	99.95	195	2.69	61.2	0.169
Indiana	623,062	97.86	1,832	2.96	64.3	0.190
Anderson, IN	17,198	99.83	51	2.98	62.1	0.172
Bloomington, IN	7,913	99.87	20	2.56	179.0	0.506
Elkhart-Goshen, IN	15,647	99.92	37	2.40	82.7	0.193
Evansville, IN-KY	34,434	95.72	81	2.42	60.1	0.147
Fort Wayne, IN	37,565	97.77	123	3.34	65.0	0.214
Gary-Hammond, IN	61,160	97.01	236	3.65+	51.5	0.190
Indianapolis, IN	118,407	93.81	343	2.96	66.9	0.204
Kokomo, IN	10,842	99.94	38	3.51	26.1	0.092
Lafayette, IN	11,228	99.92	44	4.01	61.4	0.271
Muncie, IN	13,759	99.91	26	1.92	0.0	0.000
South Bend, IN	33,170	99.93	77	2.34	51.3	0.120
Terre Haute, IN	19,585	99.89	75	4.02	92.5	0.416
Illinois	1,265,011	95.90	3,388	2.72	60.5	0.166
Aurora-Elgin, IL	30,946	98.68	75	2.50	25.9	0.065
Bloomington, IL	12,672	99.94	35	2.90	82.7	0.242
Champaign, IL	13,391	99.91	40	3.04	26.5	0.075
Chicago, IL	608,135	92.94	1,599	2.67	63.6	0.173
Decatur, IL	15,992	99.97	32	2.06	99.3	0.190
Joliet, IL	28,047	97.18	96	3.39	84.4	0.283
Kankakee, IL	12,020	99.94	29	2.39	31.3	0.082
Lake County, IL	36,099	96.52	97	2.63	103.0	0.247
Peoria, IL	43,549	99.93	142	3.30	55.4	0.184
Rockford, IL	28,351	88.93	70	2.48	69.4	0.177
Springfield, IL	24,799	99.96	74	3.15	68.1	0.205

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	2,745	2.75	62.7	0.173
Ann Arbor, MI	17,760	95.12	56	3.24	50.0	0.171
Battle Creek, MI	16,831	99.89	44	2.63	125.1	0.357
Benton Harbor, MI	21,618	99.88	69	3.13	99.6	0.320
Detroit, MI	448,826	96.43	1,134	2.50	63.5	0.157
Flint, MI	43,084	91.01	139	3.27	57.1	0.185
Grand Rapids, MI	64,091	95.42	211	3.37	81.5	0.268
Jackson, MI	17,046	99.82	40	2.32	24.9	0.058
Kalamazoo, MI	21,512	99.85	79	3.75	34.2	0.140
Lansing, MI	32,460	90.23	76	2.41	24.6	0.062
Muskegon, MI	18,957	98.06	64	3.28	16.7-	0.051
Saginaw, MI	42,162	96.18	125	2.91	38.2	0.116
Wisconsin	611,044	99.60	1,874	3.09+	71.0	0.221+
Appleton, WI	34,483	99.96	117	3.42	25.3	0.086
Eau Claire, WI	16,955	99.94	42	2.50	51.7	0.118
Green Bay, WI	19,185	99.97	53	2.80	38.5	0.104
Janesville, WI	16,529	99.85	46	2.87	158.6	0.428
Kenosha, WI	14,291	99.91	59	4.12	61.4	0.278
LaCrosse, WI	11,858	99.91	36	3.20	79.3	0.259
Madison, WI	30,776	99.74	90	3.01	50.6	0.165
Milwaukee, WI	166,813	99.21	607	3.75+	81.7	0.315+
Racine, WI	20,503	99.90	51	2.50	36.8	0.098
Sneboygan, WI	14,461	99.98	38	2.67	55.2	0.139
Wausau, WI	12,945	99.95	31	2.36	173.5	0.383
West North Central	2,156,545	93.50	6,373	3.08+	59.7	0.183
Minnesota	397,258	77.30	1,020	2.73	65.3	0.173
Duluth, MN-WI	29,977	76.74	51	1.76-	63.0	0.102
Minneapolis, MN-WI	141,769	64.45	340	2.69	83.7	0.220
Rochester, MN	9,393	99.67	34	3.91	0.0	0.000
St. Cloud, MN	12,248	70.92	40	3.54	99.2	0.346
Iowa	404,057	99.37	1,116	2.87	53.8	0.154
Cedar Rapids, IA	19,323	99.94	124	6.60+	50.8	0.369
Davenport, IA-IL	44,646	99.94	65	1.47-	91.5	0.135
Des Moines, IA	40,067	94.50	134	3.52	94.2	0.334
Dubuque, IA	11,460	99.95	24	2.20	40.9	0.090
Iowa City, IA	6,240	99.90	14	2.35	217.4	0.494
Sioux City, IA-NE	15,951	99.96	34	2.25	30.8	0.064
Waterloo, IA	19,521	99.96	47	2.44	0.0	0.000

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	2,231	3.51+	57.9	0.207
Columbia, MO	8,560	99.98	46	5.52	61.7	0.356
Joplin, MO	19,275	99.95	70	3.70	30.5	0.103
Kansas City, MO-KS	154,919	95.72	407	2.73	63.7	0.178
St. Joseph, MO	13,630	99.97	28	2.17	75.4	0.150
St. Louis, MO-IL	283,167	97.43	988	3.62+	63.4	0.237
Springfield, MO	27,676	99.94	115	4.27+	62.1	0.255
North Dakota	85,433	98.28	334	3.92+	48.1	0.188
Bismarck, ND	8,160	95.13	44	5.47	45.7	0.247
Fargo, ND-MN	14,138	96.57	48	3.56	64.2	0.219
Grand Forks, ND	5,687	99.95	20	3.65	0.0	0.000
South Dakota	96,216	99.59	263	2.80	42.1	0.116
Rapid City, SD	7,152	99.89	16	2.19	0.0	0.000
Sioux Falls, SD	13,275	99.93	33	2.57	32.8	0.077
Nebraska	209,910	98.52	524	2.62	71.2	0.176
Lincoln, NE	20,994	98.50	49	2.48	44.0	0.099
Omaha, NE-IA	57,609	95.39	175	3.16	110.1	0.337
Kansas	307,796	95.82	885	3.01	68.4	0.204
Lawrence, KS	4,965	87.78	7	1.49	129.0	0.209
Topeka, KS	18,985	97.26	72	4.06	39.6	0.164
Wichita, KS	45,844	88.57	173	3.92+	41.9	0.156
South	8,980,101	97.94	26,132	2.89+	60.5	0.175
South Atlantic	4,668,855	96.31	12,891	2.72	56.2	0.152
Delaware	70,251	99.94	172	2.37	63.4	0.154
Wilmington, DE-NJ-MD	58,114	99.65	153	2.56	56.2	0.152
Maryland	436,606	99.49	1,111	2.51	50.9	0.129
Baltimore, MD	244,878	99.90	638	2.58	51.2	0.137
Cumberland, MD-WV	17,051	99.95	28	1.64	74.8	0.116
Hagerstown, MD	14,522	99.95	33	2.26	64.2	0.136
District of Col.	66,196	99.75	92	1.49-	57.3	0.094
Washington, DC-MD-VA	261,121	99.05	563	2.15-	59.9	0.126

See notes at end of table.



Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,256	2.19-	46.7	0.101-
Charlottesville, VA	12,020	99.92	25	2.09	0.0	0.000
Danville, VA	15,532	99.99	20	1.28-	0.0	0.000
Lynchburg, VA	18,110	99.99	20	1.13-	108.5	0.111
Norfolk, VA	102,601	99.96	323	3.06	48.6	0.153
Richmond, VA	85,698	99.98	248	2.91	43.3	0.128
Roanoke, VA	30,622	99.98	62	2.12	31.5	0.066
West Virginia	244,259	98.98	588	2.40	45.6	0.109-
Charleston, WV	34,215	99.96	145	4.17+	55.4	0.230
Huntington, WV-KY-OH	40,891	99.95	76	1.87-	0.122	0.122
Parkersburg, WV-OH	19,888	99.94	31	1.59-	32.4	0.050
Wheeling, WV-OH	22,016	82.51	38	1.79	27.6	0.046-
North Carolina	689,138	99.93	1,588	2.27-	46.8-	0.104-
Asheville, NC	24,469	99.92	45	1.88	24.6	0.040-
Burlington, NC	14,505	99.99	37	2.49	0.0	0.000
Charlotte, NC	109,337	99.79	257	2.33	75.0	0.171
Fayetteville, NC	13,388	99.98	23	1.64	0.0	0.000
Greensboro, NC	99,387	99.97	252	2.53	43.7	0.109
Hickory, NC	23,392	99.97	56	2.32	90.9	0.208
Jacksonville, NC	5,134	99.86	9	1.63	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	119	2.13	50.3	0.106
Wilmington, NC	12,634	99.97	34	2.62	28.5	0.078
South Carolina	329,020	99.44	906	2.67	51.9	0.136
Anderson, SC	16,583	99.70	41	2.42	49.1	0.118
Charleston, SC	34,246	98.90	103	2.89	59.8	0.171
Columbia, SC	35,361	99.98	114	3.13	36.2	0.111
Florence, SC	11,195	99.96	35	3.07	125.0	0.438
Greenville, SC	65,893	98.01	189	2.82	68.2	0.193
Georgia	561,716	99.71	1,648	2.92	62.8	0.184
Albany, GA	9,292	99.92	16	1.70	67.0	0.106
Athens, GA	13,510	99.96	38	2.85	26.0	0.074
Atlanta, GA	189,539	99.27	555	2.94	66.0	0.194
Augusta, GA-SC	32,938	99.93	126	3.73	102.5	0.387
Columbus, GA-AL	22,847	99.96	41	1.76	64.8	0.129
Macon, GA	25,929	99.97	91	3.50	60.1	0.229
Savannah, GA	25,338	99.94	86	3.33	43.4	0.155

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As Percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees			
Florida	1,705,534	90.97	5,530	3.18+	61.8	0.195+			
Bradenton, FL	42,906	99.68	124	2.89	24.8	0.069-			
Daytona Beach, FL	62,616	92.90	213	3.34	62.0	0.204			
Fort Lauderdale, FL	181,839	81.09	694	4.02+	70.8	0.292+			
Fort Myers, FL	61,428	99.65	187	2.76	29.7	0.076-			
Fort Pierce, FL	41,198	99.28	109	2.39	59.6	0.137			
FT. Walton Beach, FL	10,169	99.88	47	4.10	66.5	0.279			
Gainesville, FL	16,758	99.58	36	2.07	25.6	0.058			
Jacksonville, FL	80,895	98.22	366	4.44+	50.0	0.220			
Lakeland, FL	55,495	99.56	188	3.21	49.5	0.157			
Melbourne, FL	46,501	99.72	210	4.07+	96.2	0.385			
Miami-Hialeah, FL	168,502	79.57	365	2.37	88.4	0.210			
Naples, FL	23,433	99.75	58	2.19	20.3	0.039-			
Ocala, FL	31,367	99.50	97	2.72	106.6	0.297			
Orlando, FL	90,604	98.55	360	3.84+	53.4	0.205			
Panama City, FL	11,817	99.70	45	3.53	93.8	0.323			
Pensacola, FL	29,972	99.89	114	3.63	116.7	0.421			
Sarasota, FL	77,895	99.81	278	3.45	59.1	0.200			
Tallahassee, FL	17,414	97.85	52	2.96	60.9	0.171			
Tampa, FL	323,951	87.05	857	2.68	53.5	0.138			
West Palm Beach, FL	139,729	85.22	506	3.59+	55.9	0.196			
East South Central	1,726,272	99.80	5,463	3.18+	51.7-	0.165			
Kentucky	422,657	99.70	1,083	2.57	49.4	0.127			
Lexington, KY	31,008	98.87	71	2.34	13.8-	0.032-			
Louisville, KY-IN	107,485	99.20	312	2.95	59.4	0.177			
Owensboro, KY	10,319	99.96	25	2.46	0.0	0.000			
Tennessee	550,327	99.65	1,935	3.52+	52.6	0.184			
Chattanooga, TN-GA	50,061	99.97	153	3.08	48.3	0.139			
Clarksville, TN-KY	12,541	99.91	37	2.96	24.8	0.079			
Jackson, TN	10,064	99.95	34	3.54	54.2	0.203			
Johnson City, TN-VA	55,068	99.97	113	2.02	36.8	0.071			
Knoxville, TN	70,970	99.96	276	3.85+	54.0	0.209			
Memphis, TN-AR-MS	88,836	98.06	336	3.85+	64.6	0.249			
Nashville, TN	92,994	99.96	350	3.82+	39.3	0.150			

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Alabama	463,131	99.97	1,702	3.68+	46.0-	0.173
Anniston, AL	13,124	99.97	44	3.29	74.0	0.223
Birmingham, AL	108,546	99.98	439	4.12+	32.9-	0.139
Dothan, AL	12,690	99.94	77	6.02+	67.2	0.468
Florence, AL	16,687	99.97	93	5.48+	30.2	0.176
Gadsden, AL	14,295	99.97	80	5.46+	35.2	0.204
Huntsville, AL	17,137	99.96	55	3.11	58.7	0.171
Mobile, AL	50,513	99.96	146	2.81	54.4	0.155
Montgomery, AL	29,832	99.97	72	2.46	81.8	0.202
Tuscaloosa, AL	13,604	99.99	66	4.94	53.4	0.296
Mississippi	290,157	99.98	743	2.61	66.8	0.169
Biloxi-Gulfport, MS	18,079	99.97	63	3.31	16.1-	0.053
Jackson, MS	35,305	99.98	91	2.66	109.4	0.257
Pascagoula, MS	8,556	99.88	20	2.16	251.4	0.558
West South Central	2,584,974	99.74	7,778	3.00+	73.5+	0.221+
Arkansas	321,739	99.96	1,225	3.78+	48.6	0.185
Fayetteville, AR	11,803	99.95	39	3.30	26.4	0.084
Fort Smith, AR-OK	21,413	99.98	47	2.18	91.2	0.185
Little Rock, AR	50,966	99.99	251	4.97+	54.1	0.274
Pine Bluff, AR	11,012	99.98	19	1.77	98.4	0.184
Louisiana	415,968	99.98	1,225	2.96	73.0	0.217
Alexandria, LA	13,819	99.96	37	2.73	78.3	0.220
Baton Rouge, LA	39,583	99.97	147	3.64	60.4	0.225
Houma-Thibodaux, LA	13,501	100.00	68	4.77	128.1	0.574
Lafayette, LA	14,620	99.99	32	2.17	130.1	0.272
Lake Charles, LA	16,436	99.98	41	2.38	81.0	0.177
Monroe, LA	14,648	99.99	29	2.05	151.3	0.278
New Orleans, LA	118,708	99.98	398	3.38	64.8	0.227
Shreveport, LA	36,822	99.98	134	3.77	96.6	0.389
Oklahoma	378,716	99.02	1,154	3.11+	70.0	0.218
Enid, OK	8,215	99.94	12	1.53	160.5	0.248
Lawton, OK	8,221	99.99	29	3.38	0.0	0.000
Oklahoma City, OK	88,646	97.45	290	3.38	60.0	0.206
Tulsa, OK	71,032	98.13	226	3.23	58.5	0.184

See notes at end of table.



Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	4,174	2.81	82.0+	0.231+
Abilene, TX	13,100	99.96	49	3.85	105.5	0.386
Amarillo, TX	19,063	99.97	51	2.67	107.2	0.311
Austin, TX	47,578	99.95	120	2.52	64.3	0.168
Beaumont, TX	42,323	99.98	145	3.36	41.9	0.139
Brazoria, TX	12,486	99.78	45	3.35	118.0	0.385
Brownsville, TX	20,169	99.86	69	3.19	150.9	0.475
Bryan, TX	6,955	99.96	21	3.05	100.4	0.289
Corpus Christi, TX	28,417	95.56	86	2.92	134.3	0.412
Dallas, TX	172,118	99.95	494	2.90	73.5	0.220
El Paso, TX	37,292	99.94	121	3.04	25.8	0.078
Fort Worth, TX	97,947	99.96	199	2.02	87.8	0.162
Galveston, TX	19,376	99.94	66	3.25	117.4	0.351
Houston, TX	187,992	99.85	631	3.27+	88.4	0.292+
Killeen-Temple, TX	17,182	99.97	37	2.13	255.2+	0.521
Laredo, TX	8,421	99.99	8	0.94-	0.0	0.000
Longview, TX	20,547	99.98	52	2.60	126.1	0.294
Lubbock, TX	18,957	99.97	84	4.34	69.3	0.311
McAllen, TX	27,402	99.82	135	4.49+	86.0	0.415
Midland, TX	7,362	99.96	26	3.36	0.0	0.000
Odessa, TX	9,207	99.99	48	4.86	0.0	0.000
San Angelo, TX	11,213	99.99	56	5.04	18.0	0.089
San Antonio, TX	107,989	99.28	273	2.49	90.8	0.248
Sherman-Denison, TX	14,532	99.99	37	2.59	74.5	0.207
Texas, TX-AR	15,315	99.99	42	2.82	52.6	0.131
Tyler, TX	18,223	99.98	61	3.30	16.4-	0.053
Victoria, TX	6,871	99.97	25	3.49	89.1	0.284
Waco, TX	23,624	99.99	39	1.69	190.3	0.299
Wichita Falls, TX	14,462	99.97	37	2.64	49.8	0.140
West	4,539,951	93.08	13,161	2.82	62.7	0.177
Mountain	1,200,638	94.36	3,456	2.74	66.2	0.179
Montana	97,248	99.90	342	3.37	66.7	0.232
Billings, MT	12,097	99.88	38	3.03	0.0	0.000
Great Falls, MT	9,076	99.91	43	4.58	48.2	0.217
Idaho	109,822	99.77	302	2.60	47.8	0.115
Boise City, ID	18,471	99.90	56	2.94	19.0	0.053
Wyoming	42,408	99.91	140	3.19	51.8	0.163
Casper, WY	5,379	99.91	33	5.94	0.0	0.000
Cheyenne, WY	6,886	99.96	21	2.98	52.9	0.143

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	628	2.33-	60.4	0.138
Boulder-Longmont, CO	15,143	97.96	31	2.11	69.7	0.135
Colorado Springs, CO	24,899	95.03	74	2.87	72.2	0.197
Denver, CO	119,624	94.10	238	2.00-	56.5	0.109
Fort Collins, CO	15,089	99.71	52	3.41	36.6	0.132
Greeley, CO	11,610	99.62	46	3.91	45.7	0.171
Pueblo, CO	15,372	94.43	44	2.82	53.3	0.129
New Mexico	125,371	92.49	308	2.35	73.4	0.171
Albuquerque, NM	33,783	81.01	83	2.42	70.6	0.176
Las Cruces, NM	9,375	99.94	24	2.35	86.8	0.205
Santa Fe, NM	8,454	93.66	19	2.17	0.0	0.000
Arizona	348,748	91.33	1,055	2.84	75.5	0.215
Phoenix, AZ	187,381	86.74	619	3.18	68.9	0.218
Tucson, AZ	70,550	96.06	207	2.82	89.9	0.249
Utah	128,579	99.92	398	2.98	51.0	0.143
Provo-Orem, UT	16,076	99.93	69	4.08	60.4	0.240
Salt Lake City, UT	77,243	99.94	229	2.87	47.0	0.127
Nevada	81,799	86.15	283	3.04	82.4	0.251
Las Vegas, NV	45,252	82.98	188	3.63	68.3	0.247
Reno, NV	19,133	89.17	51	2.39	59.9	0.148
Pacific	3,339,313	92.62	9,705	2.85+	61.5	0.177
Washington	461,706	92.41	1,668	3.53+	57.4	0.203
Bellingham, WA	13,629	99.51	58	4.24	30.8	0.146
Bremerton, WA	15,439	96.59	46	2.90	69.0	0.192
Olympia, WA	14,254	90.98	65	4.49	42.4	0.209
Richland, WA	12,559	99.85	39	2.84	0.0	0.000
Seattle, WA	159,828	86.57	584	3.65+	63.3	0.238
Spokane, WA	41,237	94.51	152	3.73	41.0	0.147
Tacoma, WA	50,245	97.24	229	4.42+	71.5	0.314
Vancouver, WA	17,048	80.32	48	2.77	39.3	0.116
Yakima, WA	22,738	99.74	62	2.67	105.0	0.303
Oregon	303,778	86.84	869	2.80	45.1	0.124
Eugene, OR	28,947	88.67	78	2.61	74.4	0.204
Medford, OR	20,326	99.78	61	2.82	50.0	0.143
Portland, OR	99,155	72.79	294	3.13	66.2	0.198
Salem, OR	33,249	90.39	78	2.39	28.5	0.061

See notes at end of table.

Table 3. Coronary artery bypass: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	6,943	2.76	63.8	0.178
Anaheim-Santa Ana, CA	167,171	89.39	489	3.00	44.6	0.133
Bakersfield, CA	44,969	99.76	135	2.79	53.3	0.149
Chico, CA	27,102	99.09	85	2.95	67.9	0.214
Fresno, CA	58,425	99.90	194	3.25	109.8	0.373+
Los Angeles, CA	677,939	91.40	1,691	2.52	66.4	0.168
Merced, CA	13,462	99.86	47	3.25	86.1	0.287
Modesto, CA	33,619	98.80	131	3.78	7.6-	0.028-
Oakland, CA	188,258	99.08	485	2.56	74.5	0.196
Oxnard-Ventura, CA	49,488	93.74	145	2.86	53.0	0.159
Redding, CA	17,796	99.73	56	2.87	19.6	0.053
Riverside, CA	203,246	90.92	608	2.89	43.8	0.129
Sacramento, CA	120,273	91.81	386	3.06	60.8	0.187
Salinas, CA	29,131	99.86	58	1.93	223.1+	0.405
San Diego, CA	205,402	91.35	605	2.87	50.8	0.148
San Francisco, CA	163,753	89.02	359	2.25-	76.1	0.173
San Jose, CA	105,258	99.50	311	2.92	88.4	0.255
Santa Barbara, CA	38,021	99.70	105	2.77	84.4	0.237
Santa Cruz, CA	24,640	99.77	53	2.22	76.1	0.165
Santa Rosa, CA	44,775	99.49	127	2.84	48.8	0.133
Stockton, CA	40,855	91.54	175	4.12+	82.3	0.336
Vallejo, CA	35,778	98.59	144	3.90	45.7	0.192
Visalia, CA	28,811	99.91	71	2.37	26.9	0.067
Yuba City, CA	11,835	99.35	46	3.61	45.2	0.161
Alaska	16,348	99.78	35	1.83	95.9	0.170
Anchorage, AK	5,625	99.75	11	1.67	94.6	0.163
Hawaii	80,233	83.64	190	2.08-	80.7	0.164
Honolulu, HI	57,680	83.31	148	2.26	83.1	0.179

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate ( $p < .01$ ).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.





# Cardiac catheterization

Cardiac catheterization is a diagnostic tool frequently used to evaluate patients for cardiac surgery and angioplasty.

Hospitalizations for cardiac catheterization among the aged Medicare population accounted for 243,611 stays in 1986, a rate of 9.12 discharges per 1,000 enrollees. The 30-day post-admission death rate per 1,000 discharges was 51.9, or approximately 5 percent of all cardiac catheterization discharges (Table 1). This relatively high post-hospital death rate is very likely due to the underlying heart disease rather than to the catheterization itself.

## Age and sex patterns

The hospital discharge rate per 1,000 enrollees for cardiac catheterization was 92 percent greater for men (12.82) than for women (6.67). For both sexes, the number of discharges per 1,000 enrollees was highest in the age group 65–74 years, 15.67 for men and 8.93 for women; and then it declined sharply with age.

The 30-day post-admission death rate per 1,000 discharges was similar for both men and women across all age groups. However, the 30-day post-admission death rate per 1,000 enrollees was greater for men than for women across all age groups, reflecting the higher discharge rate for men.

NOTE: Cardiac catheterization is ICD–9–CM codes 37.21–37.23.

## Patterns by race

White men and women had substantially more cardiac catheterizations per 1,000 enrollees than black men and women. In each age group, white men had more than double the discharge rate for black men. For example, in the age group 65–74 years, the discharge rate per 1,000 white men was 16.52, whereas the rate for black men that age was 6.90. Although the difference between rates for white women and black women was also high, it was not as great as the difference between rates for white men and black men.

Except for persons 85 years of age or over, the 30-day post-admission death rate per 1,000 discharges was relatively similar for men and women of both races. Black men 85 years of age or over had a 30-day post-admission death rate that was 48 percent higher than the rate for white men of that age. At the same time, white women 85 years of age or over had a 30-day post-admission death rate that was 24 percent higher than the rate for black women of that age.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are

shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

Geographically, States with the highest discharge rates per 1,000 enrollees were scattered throughout the country, with the largest number of States located in the South (Figure 1). The States with the lowest discharge rates per 1,000 enrollees were also scattered throughout the country, but the largest number was located in the Northeast. Discharge rates by State ranged from a high of 14.04 in Alabama to a low of 5.10 discharges per 1,000 enrollees in Alaska and 5.72 in New York (Table 2). The variation in discharge rates by MSAs and rural areas across and within U.S. census divisions is shown in Figure 2. The highest median discharge rate per 1,000 enrollees was in the East South Central Division and the lowest median discharge rate per 1,000 enrollees was in the New England Division. The correlation coefficient computed for discharges per 1,000 enrollees and 30-day post-admission deaths per 1,000 discharges was significant at the 0.01 level. The correlation was  $-0.15$ , indicating a weak but inverse relationship.

## Urban-rural patterns

In the United States as a whole, the discharge rate and the 30-day post-admission death rate for cardiac catheterization both were a little lower for rural areas than for all MSAs combined. This pattern held true for each of the U.S. census regions except the North Central, where the 30-day post-admission death rate per 1,000 discharges was higher in the rural areas than in the MSAs combined.



Table 1. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

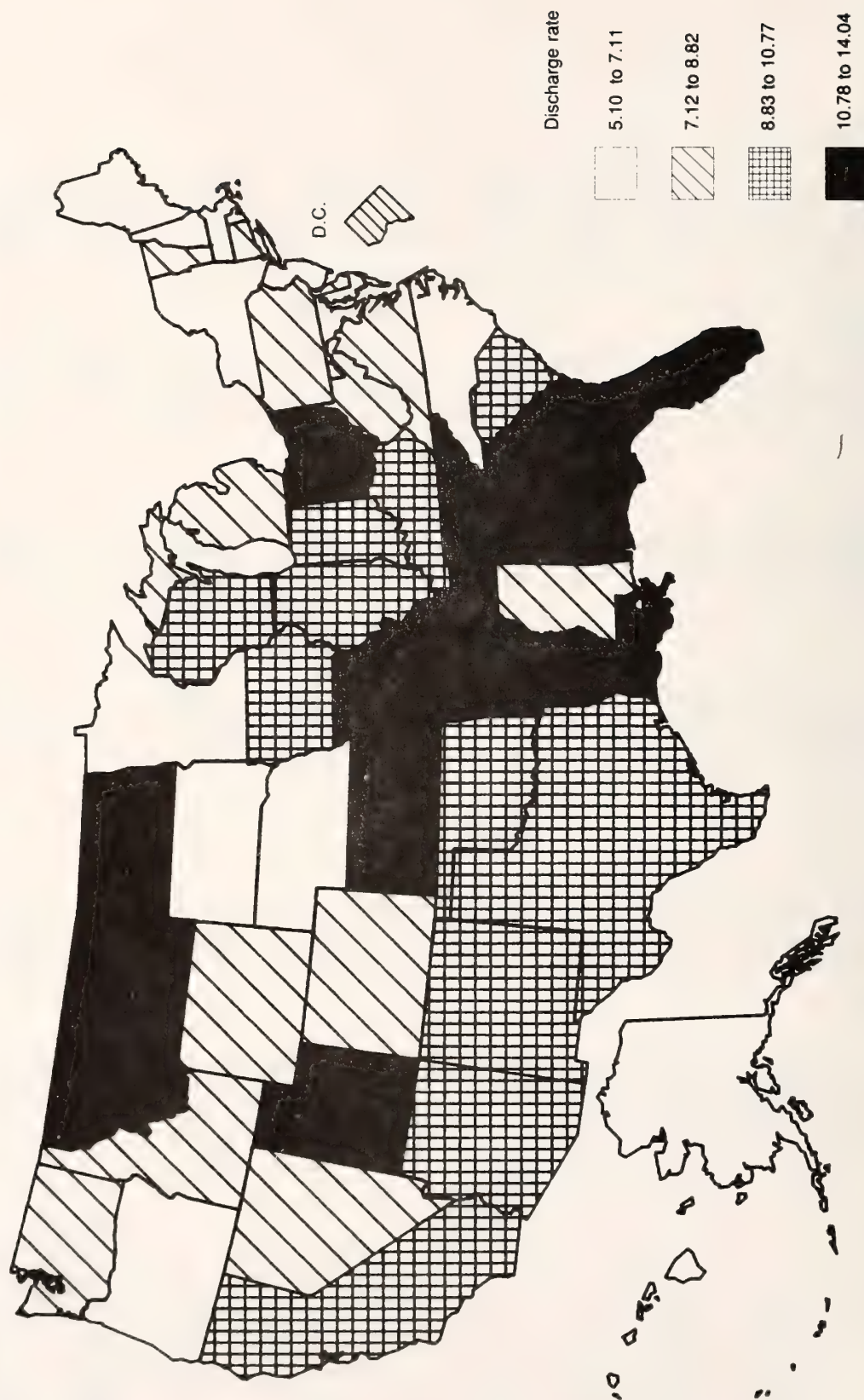
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	243,611	9.12	51.9	0.473
65-74 years	16,162,594	96.33	191,930	11.87	40.5	0.480
75-84 years	8,020,447	96.96	49,151	6.13	87.9	0.538
85 years or over	2,515,883	98.32	2,530	1.01	218.6	0.219
Men	10,650,991	96.01	136,551	12.82	51.2	0.657
65-74 years	7,056,445	95.90	110,599	15.67	40.6	0.636
75-84 years	2,912,366	96.02	24,877	8.54	91.3	0.780
85 years or over	682,180	97.22	1,075	1.58	220.5	0.347
Women	16,047,933	97.16	107,060	6.67	52.8	0.351
65-74 years	9,106,149	96.66	81,331	8.93	40.4	0.360
75-84 years	5,108,081	97.51	24,274	4.75	84.4	0.401
85 years or over	1,833,703	98.74	1,455	0.79	217.2	0.172
White	23,574,066	96.62	224,180	9.51	52.1	0.495
65-74 years	14,207,064	96.23	176,237	12.40	40.6	0.503
75-84 years	7,134,499	96.88	45,582	6.39	88.0	0.562
85 years or over	2,232,503	98.26	2,361	1.06	215.6	0.227
Men	9,391,016	95.94	126,824	13.50	51.3	0.693
65-74 years	6,216,472	95.83	102,674	16.52	40.7	0.671
75-84 years	2,573,989	95.94	23,143	8.99	91.7	0.824
85 years or over	600,555	97.12	1,007	1.68	210.5	0.353
Women	14,183,050	97.07	97,356	6.86	53.1	0.364
65-74 years	7,990,592	96.55	73,563	9.21	40.6	0.373
75-84 years	4,560,510	97.42	22,439	4.92	84.2	0.414
85 years or over	1,631,948	98.69	1,354	0.83	219.4	0.181
Black	1,991,943	97.86	9,826	4.93	48.6	0.239
65-74 years	1,213,014	97.54	7,865	6.48	38.5	0.249
75-84 years	583,429	98.11	1,845	3.16	80.2	0.253
85 years or over	195,500	99.11	116	0.59	232.8	0.138
Men	792,788	97.49	4,440	5.60	49.3	0.276
65-74 years	519,305	97.28	3,585	6.90	39.1	0.269
75-84 years	215,401	97.67	807	3.75	79.3	0.297
85 years or over	58,082	98.74	48	0.83	312.5	0.258
Women	1,199,155	98.10	5,386	4.49	48.1	0.215
65-74 years	693,709	97.74	4,280	6.17	38.1	0.234
75-84 years	368,028	98.37	1,038	2.82	80.9	0.228
85 years or over	137,418	99.26	68	0.49	175.5	0.087

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

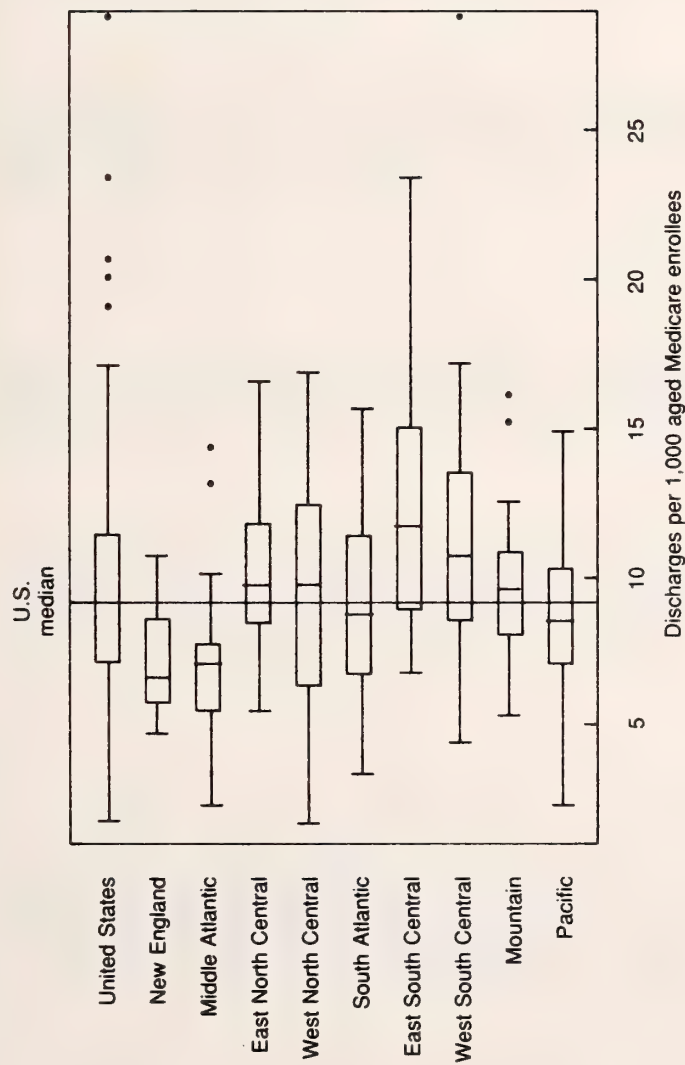
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Cardiac catheterization: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Cardiac catheterization: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



### Outliers for discharges per 1,000 enrollees

Area	Rural or metropolitan statistical area	Rate
United States	Gadsden, AL	19.12
	Florence, AL	20.15
	Tuscaloosa, AL	20.83
	Dothan, AL	23.26
Middle Atlantic	Lubbock, TX	28.96
	Reading, PA	13.09
	Lancaster, PA	14.46
	Lubbock, TX	28.96
Mountain	Provo-Orem, UT	15.25
	Great Falls, MT	16.14

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	243,611	9.12	51.9	0.473
Metropolitan	19,363,284	95.80	177,850	9.20	52.8	0.489
Rural	7,335,640	99.16	65,761	8.92-	49.4-	0.429-
Northeast	6,276,897	98.04	43,235	6.96-	61.2+	0.427-
Metropolitan	5,564,648	97.84	38,549	7.01-	61.8+	0.436-
Rural	712,249	99.69	4,686	6.55-	56.1	0.351-
New England	1,569,313	96.20	10,857	7.07-	65.1+	0.471
Metropolitan	1,342,886	95.66	9,460	7.22-	65.6+	0.485
Rural	226,427	99.53	1,397	6.18-	61.5	0.383
Maine	153,209	99.88	875	5.78-	66.3	0.373
Metropolitan	82,345	99.89	540	6.68-	67.7	0.440
Rural	70,864	99.87	335	4.75-	64.0	0.295-
New Hampshire	114,752	98.98	686	5.99-	73.4	0.445
Metropolitan	74,135	98.55	450	6.13-	72.0	0.435
Rural	40,617	99.77	236	5.75-	75.7	0.464
Vermont	62,781	99.82	483	7.78	54.4	0.431
Metropolitan	10,422	99.91	107	10.52	90.7	0.969
Rural	52,359	99.80	376	7.24-	44.0	0.324
Massachusetts	709,478	93.75	4,477	6.56-	66.8+	0.454
Metropolitan	659,025	93.40	4,126	6.53-	68.1+	0.462
Rural	50,453	98.58	351	6.92-	51.3	0.354
Rhode Island	132,332	97.59	841	6.47-	59.2	0.374
Metropolitan	132,332	97.59	841	6.47-	59.2	0.374
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	3,495	8.82	63.8+	0.582+
Metropolitan	384,627	97.50	3,396	8.84	62.2	0.569
Rural	12,134	99.66	99	8.25	122.7	0.996
Middle Atlantic	4,707,584	98.68	32,378	6.92-	59.9+	0.413-
Metropolitan	4,221,762	98.55	29,089	6.95-	60.5+	0.421-
Rural	485,822	99.76	3,289	6.72-	53.5	0.337-
New York	2,143,249	98.98	11,984	5.72-	66.5+	0.389-
Metropolitan	1,922,371	98.89	10,698	5.71-	68.4+	0.403-
Rural	220,878	99.75	1,286	5.86-	49.7	0.276-

See notes at end of table.

Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	6,533	7.07-	54.8	0.380-
Metropolitan	916,155	97.84	6,533	7.07-	54.8	0.380-
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	13,861	8.36-	56.1	0.460
Metropolitan	1,383,236	98.56	11,858	8.54-	56.1	0.474
Rural	264,944	99.78	2,003	7.43-	56.1	0.389
North Central	6,901,975	96.39	66,834	9.80+	50.3	0.483
Metropolitan	4,398,761	95.22	44,904	10.31+	49.4	0.503+
Rural	2,503,214	98.51	21,930	8.90	52.0	0.450
East North Central	4,745,430	97.76	46,612	9.83+	49.0-	0.471
Metropolitan	3,453,558	97.13	34,987	10.14+	48.6-	0.484
Rural	1,291,872	99.47	11,625	8.99	50.1	0.436
Ohio	1,263,869	99.46	13,828	10.89+	44.4-	0.467
Metropolitan	987,528	99.60	11,079	11.15+	43.9-	0.475
Rural	276,341	98.95	2,749	9.93+	46.3	0.440
Indiana	623,062	97.86	6,527	10.51+	53.3	0.553+
Metropolitan	399,457	97.01	4,326	10.86+	54.4	0.585+
Rural	223,605	99.41	2,201	9.88	51.3	0.496
Illinois	1,265,011	95.90	11,696	9.35	49.2	0.449
Metropolitan	952,934	94.73	8,810	9.32	49.1	0.447
Rural	312,077	99.68	2,886	9.48	49.7	0.452
Michigan	982,444	96.86	8,572	8.61-	53.9	0.470
Metropolitan	744,347	96.06	6,580	8.78	53.6	0.479
Rural	238,097	99.44	1,992	8.09-	54.8	0.441
Wisconsin	611,044	99.60	5,989	9.90+	46.7	0.439
Metropolitan	369,292	99.43	4,192	11.56+	45.4	0.500
Rural	241,752	99.86	1,797	7.42-	49.9	0.347-
West North Central	2,156,545	93.50	20,222	9.74+	53.2	0.511
Metropolitan	945,203	88.82	9,917	10.95+	52.3	0.570+
Rural	1,211,342	97.51	10,305	8.81	54.0	0.466
Minnesota	397,258	77.30	2,357	6.28-	51.9	0.318-
Metropolitan	187,915	67.07	1,124	6.50-	58.3	0.371
Rural	209,343	89.55	1,233	6.08-	46.0	0.272-

See notes at end of table.

Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Iowa	404,057	99.37	3,562	9.16	60.9	0.549
Metropolitan	136,818	98.24	1,413	10.65+	63.0	0.674+
Rural	267,239	99.96	2,149	8.39-	59.4	0.485
Missouri	655,875	98.17	7,504	11.76+	50.7	0.589+
Metropolitan	383,255	96.99	4,584	12.39+	45.7	0.564
Rural	272,620	99.88	2,920	10.89+	58.7	0.623+
North Dakota	85,433	98.28	916	10.86+	34.1-	0.358
Metropolitan	22,964	98.14	280	12.58+	32.8	0.394
Rural	62,469	98.34	636	10.25	34.7	0.346
South Dakota	96,216	99.59	645	6.90-	44.5	0.291-
Metropolitan	20,427	99.92	160	7.95	24.8	0.196-
Rural	75,789	99.51	485	6.61-	51.2	0.316
Nebraska	209,910	98.52	1,155	5.76-	59.2	0.316-
Metropolitan	70,076	95.86	504	7.48-	65.4	0.450
Rural	139,834	99.91	651	4.89-	54.6	0.251-
Kansas	307,796	95.82	4,083	13.84+	55.6	0.789+
Metropolitan	123,748	93.24	1,852	15.35+	58.4	0.933+
Rural	184,048	97.63	2,231	12.80+	53.2	0.695+
South	8,980,101	97.94	91,766	10.15+	48.1-	0.484
Metropolitan	5,757,016	96.87	60,543	10.45+	48.7-	0.510+
Rural	3,223,085	99.91	31,223	9.61+	46.9-	0.438-
South Atlantic	4,668,855	96.31	44,198	9.34+	46.5-	0.431-
Metropolitan	3,313,125	94.94	32,556	9.74+	46.6-	0.453
Rural	1,355,730	99.84	11,642	8.37-	46.2-	0.374-
Delaware	70,251	99.94	538	7.46-	44.0	0.327
Metropolitan	44,355	99.95	310	6.85-	38.4	0.248-
Rural	25,896	99.94	228	8.48	50.7	0.460
Maryland	436,606	99.49	3,090	6.98-	44.5	0.303-
Metropolitan	395,091	99.44	2,715	6.78-	45.9	0.304-
Rural	41,515	99.95	375	8.90	33.7	0.287
District of Col.	66,196	99.75	464	7.40-	23.4-	0.186-
Metropolitan	66,196	99.75	464	7.40-	23.4-	0.186-
Rural	0	0.00	0	0.00	0.0	0.000

See notes at end of table.



Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Virginia	566,135	99.91	4,483	7.81-	40.5-	0.307-		
Metropolitan	355,193	99.87	3,076	8.55	40.4-	0.337-		
Rural	210,942	99.97	1,407	6.56-	40.8	0.258-		
West Virginia	244,259	98.98	1,909	7.78-	44.5	0.334-		
Metropolitan	90,704	97.39	746	8.21	29.3-	0.231-		
Rural	153,555	99.95	1,163	7.53-	54.2	0.394		
North Carolina	689,138	99.93	4,985	7.11-	59.3	0.411		
Metropolitan	346,905	99.89	2,620	7.47-	62.5	0.462		
Rural	342,233	99.96	2,365	6.74-	55.6	0.361-		
South Carolina	329,020	99.44	3,237	9.54	45.4	0.418		
Metropolitan	186,873	99.05	1,994	10.36+	48.4	0.485		
Rural	142,147	99.95	1,243	8.48	40.6	0.329-		
Georgia	561,716	99.71	6,379	11.26+	35.5-	0.383-		
Metropolitan	313,319	99.54	3,762	11.92+	34.9-	0.404		
Rural	248,397	99.93	2,617	10.44+	36.5-	0.357-		
Florida	1,705,534	90.97	19,113	11.05+	49.5	0.555+		
Metropolitan	1,514,489	90.04	16,869	11.07+	49.3	0.553+		
Rural	191,045	99.17	2,244	10.96+	51.0	0.566		
East South Central	1,726,272	99.80	19,292	11.21+	46.9-	0.519		
Metropolitan	873,594	99.64	10,196	11.69+	48.2	0.561+		
Rural	852,678	99.97	9,096	10.71+	45.5-	0.475		
Kentucky	422,657	99.70	3,734	8.86	38.9-	0.323-		
Metropolitan	183,264	99.37	1,523	8.40	41.4	0.323-		
Rural	239,393	99.96	2,211	9.20	37.2-	0.322-		
Tennessee	550,327	99.65	6,533	11.85+	40.6-	0.477		
Metropolitan	342,007	99.46	3,859	11.32+	37.3-	0.419		
Rural	208,320	99.96	2,674	12.71+	45.4	0.574		
Alabama	463,131	99.97	6,509	14.04+	54.0	0.770+		
Metropolitan	281,960	99.97	4,238	14.96+	58.6	0.906+		
Rural	181,171	99.97	2,271	12.59+	45.1	0.560		
Mississippi	290,157	99.98	2,516	8.82	56.1	0.478		
Metropolitan	66,363	99.96	576	8.58	58.9	0.481		
Rural	223,794	99.98	1,940	8.89	55.3	0.478		

See notes at end of table.

Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central	2,584,974	99.74	28,276	10.92+	51.3	0.557+
Metropolitan	1,570,297	99.59	17,791	11.26+	52.7	0.598+
Rural	1,014,677	99.97	10,485	10.39+	48.7	0.494
Arkansas	321,739	99.96	3,969	12.29+	43.2-	0.528
Metropolitan	100,966	99.98	1,295	12.92+	39.0	0.505
Rural	220,773	99.95	2,674	12.00+	45.2	0.539
Louisiana	415,968	99.98	5,058	12.22+	54.2	0.651+
Metropolitan	268,137	99.98	3,474	12.96+	59.0	0.760+
Rural	147,831	99.99	1,584	10.86+	43.6	0.453
Oklahoma	378,716	99.02	4,012	10.77+	53.7	0.571
Metropolitan	180,038	98.00	2,137	12.05+	55.4	0.675+
Rural	198,678	99.96	1,875	9.61	51.7	0.479
Texas	1,468,551	99.81	15,237	10.30+	51.7	0.533+
Metropolitan	1,021,156	99.73	10,885	10.52+	51.9	0.553+
Rural	447,395	99.97	4,352	9.77+	51.4	0.492
West	4,539,951	93.08	41,776	9.03	53.1	0.500
Metropolitan	3,642,859	91.96	33,854	9.20	54.2	0.523+
Rural	897,092	97.88	7,922	8.38-	48.0	0.404-
Mountain	1,200,638	94.36	11,705	9.40	47.9	0.451
Metropolitan	720,893	92.10	7,201	9.71+	49.8	0.487
Rural	479,745	97.98	4,504	8.95	44.9	0.398
Montana	97,248	99.90	1,277	12.77+	39.5	0.507
Metropolitan	21,173	99.90	295	13.58+	27.0-	0.373
Rural	76,075	99.91	982	12.55+	43.3	0.543
Idaho	109,822	99.77	916	8.02-	29.6-	0.231-
Metropolitan	18,471	99.90	158	8.35	20.1-	0.161-
Rural	91,351	99.74	758	7.96-	31.5-	0.245-
Wyoming	42,408	99.91	373	8.60	36.6	0.303
Metropolitan	12,265	99.93	123	9.81	45.1	0.406
Rural	30,143	99.89	250	8.11	32.7	0.261
Colorado	266,663	94.73	1,922	7.18-	47.5	0.333-
Metropolitan	201,737	95.23	1,449	7.18-	47.1	0.334-
Rural	64,926	93.22	473	7.18-	48.9	0.333

See notes at end of table.

Table 2. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 enrollees
New Mexico	125,371	92.49	1,263	9.77	48.9	0.479	
Metropolitan	51,612	85.86	519	9.82	46.5	0.463	
Rural	73,759	97.76	744	9.74	50.7	0.489	
Arizona	348,748	91.33	3,670	10.00+	53.0	0.535	
Metropolitan	257,931	89.11	2,902	10.90+	53.4	0.588	
Rural	90,817	98.31	768	7.63-	51.1	0.391	
Utah	128,579	99.92	1,547	11.68+	49.1	0.580	
Metropolitan	93,319	99.94	1,155	12.05+	50.9	0.623	
Rural	35,260	99.88	392	10.71	43.8	0.468	
Nevada	81,799	86.15	737	8.13	62.2	0.522	
Metropolitan	64,385	84.73	600	8.41	59.2	0.514	
Rural	17,414	91.83	137	7.08	75.3	0.554	
Pacific	3,339,313	92.62	30,071	8.89-	55.0	0.517+	
Metropolitan	2,921,966	91.93	26,653	9.07	55.3	0.532+	
Rural	417,347	97.77	3,418	7.74-	52.2	0.413	
Washington	461,706	92.41	3,602	7.69-	51.0	0.405	
Metropolitan	346,977	90.86	2,677	7.67-	52.7	0.420	
Rural	114,729	97.42	925	7.75-	45.9	0.359	
Oregon	303,778	86.84	2,059	6.70-	55.6	0.383	
Metropolitan	181,677	80.38	1,213	6.80-	63.5	0.444	
Rural	122,101	98.65	846	6.55-	43.8	0.295-	
California	2,477,248	93.71	23,754	9.50+	55.2	0.557+	
Metropolitan	2,330,007	93.36	22,291	9.51+	55.0	0.557+	
Rural	147,241	99.57	1,463	9.34	57.5	0.554	
Alaska	16,348	99.78	94	5.10-	93.2	0.531	
Metropolitan	5,625	99.75	39	6.09	92.4	0.691	
Rural	10,723	99.80	55	4.58-	93.8	0.448	
Hawaii	80,233	83.64	562	6.40-	65.7	0.429	
Metropolitan	57,680	83.31	433	6.84-	63.3	0.450	
Rural	22,553	84.47	129	5.25-	74.4	0.377	

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	243,611	9.12	51.9	0.473
Northeast	6,276,897	98.04	43,235	6.96-	61.2+	0.427-
New England	1,569,313	96.20	10,857	7.07-	65.1+	0.471
Maine	153,209	99.88	875	5.78-	66.3	0.373
Bangor, ME	16,035	99.87	101	6.37-	42.2	0.250
Lewiston-Auburn, ME	13,464	99.93	139	10.64	30.8	0.301
Portland, ME	52,846	99.89	300	5.78-	91.1	0.533
New Hampshire	114,752	98.98	686	5.99-	73.4	0.445
Manchester, NH	44,397	97.91	280	6.45-	67.1	0.433
Portsmouth, NH	29,738	99.52	170	5.67-	80.6	0.438
Vermont	62,781	99.82	483	7.78	54.4	0.431
Burlington, VT	10,422	99.91	107	10.52	90.7	0.969
Massachusetts	709,478	93.75	4,477	6.56-	66.8+	0.454
Boston, MA	429,794	95.67	2,729	6.67-	69.0+	0.488
New Bedford, MA	65,540	98.67	346	5.32-	39.1	0.215-
Pittsfield, MA	20,281	91.00	100	5.08-	54.0	0.250
Springfield, MA	72,225	92.57	361	5.12-	110.6+	0.549
Worcester, MA	71,185	79.42	590	8.74	58.1	0.505
Rhode Island	132,332	97.59	841	6.47-	59.2	0.374
Providence, RI	132,332	97.59	841	6.47-	59.2	0.374
Connecticut	396,761	97.56	3,495	8.82	63.8+	0.582+
Bridgeport, CT	96,911	96.63	887	9.18	45.9	0.426
Hartford, CT	157,139	99.16	1,393	8.84	75.6+	0.708+
New Haven, CT	102,964	95.31	878	8.61	57.0	0.509
New London, CT	27,613	99.70	238	8.48	60.5	0.508

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	32,378	6.92-	59.9+	0.413-
New York	2,143,249	98.98	11,984	5.72-	66.5+	0.389-
Albany, NY	115,122	98.78	379	3.35-	53.6	0.174-
Binghamton, NY	35,576	99.96	294	8.34	43.9	0.339
Buffalo, NY	134,451	98.66	799	5.91-	47.3	0.261-
Elmira, NY	13,699	99.94	99	7.28	54.3	0.367
Glens Falls, NY	15,222	99.63	34	2.26-	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	1,941	6.42-	64.4	0.428
New York, NY	997,473	99.58	5,340	5.63-	80.1+	0.491
Niagara Falls, NY	30,841	99.69	229	7.21-	33.2	0.225-
Orange County, NY	30,488	99.89	111	3.66-	59.0	0.196-
Poughkeepsie, NY	27,864	98.47	144	5.28-	76.1	0.396
Rochester, NY	102,542	88.80	699	7.02-	56.8	0.376
Syracuse, NY	75,217	99.92	301	4.00-	34.0	0.133-
Utica-Rome, NY	46,733	99.90	328	7.00-	45.8	0.301
New Jersey	916,155	97.84	6,533	7.07-	54.8	0.380-
Atlantic City, NJ	46,406	97.93	336	7.35-	92.8+	0.712
Bergen-Passaic, NJ	171,246	99.45	1,315	7.62-	46.4	0.350-
Jersey City, NJ	64,069	99.25	350	5.48-	91.0	0.502
Middlesex, NJ	91,009	94.70	870	9.14	54.9	0.504
Monmouth-Ocean, NJ	154,643	99.57	967	6.19-	60.9	0.357
Newark, NJ	211,511	99.40	1,573	7.49-	41.7	0.304-
Trenton, NJ	38,499	97.14	243	6.28-	53.7	0.339
Vineland, NJ	16,382	96.17	101	6.05-	21.9	0.121-
Pennsylvania	1,648,180	98.75	13,861	8.36-	56.1	0.460
Allentown, PA-NJ	94,668	99.09	914	9.47	35.2-	0.326
Altoona, PA	20,692	99.99	95	4.64-	23.7	0.097-
Beaver County, PA	27,562	99.95	244	8.42	26.7	0.214-
Erie, PA	35,244	99.92	346	9.54	67.3	0.623
Harrisburg, PA	72,929	99.95	513	7.00-	50.1	0.330
Johnstown, PA	40,260	99.97	226	5.43-	59.4	0.296
Lancaster, PA PA-NJ	48,045	99.93	683	14.46+	54.1	0.835+
Philadelphia, PA	569,054	95.81	4,373	7.76-	62.5+	0.487
Pittsburgh, PA	323,494	99.06	3,055	9.28	62.3	0.577
Reading, PA	48,476	99.88	636	13.09+	47.5	0.573
Scranton, PA	122,888	99.95	876	7.08-	44.6	0.309-
Sharon, PA	19,009	99.97	197	10.15	42.1	0.417
State College, PA	10,032	99.97	49	4.81-	60.4	0.297
Williamsport, PA	16,877	99.98	125	7.48	58.4	0.415
York, PA	48,541	99.96	253	5.15-	59.3	0.265-

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	6,901,975	96.39	66,834	9.80+	50.3	0.483
East North Central	4,745,430	97.76	46,612	9.83+	49.0-	0.471
Ohio	1,263,869	99.46	13,828	10.89+	44.4-	0.467
Akron, OH	75,615	99.90	1,032	13.54+	45.2	0.597
Canton, OH	51,895	99.97	619	11.71+	29.4-	0.326
Cincinnati, OH-KY-IN	159,407	99.96	1,613	10.33+	51.9	0.524
Cleveland, OH	242,585	99.71	2,374	9.67	44.6	0.413
Columbus, OH	121,377	99.73	1,659	13.75+	41.7	0.565
Dayton, OH	103,547	99.95	1,260	12.04+	49.8	0.580
Hamilton, OH	26,009	99.95	252	9.68	64.8	0.617
Lima, OH	19,579	99.97	190	9.75	39.1	0.359
Lorain-Elyria, OH	27,340	99.85	314	10.99	56.5	0.617
Mansfield, OH	15,230	99.96	141	9.08	22.0	0.195
Steubenville, OH-WV	21,934	98.57	275	12.09+	23.1-	0.270
Toledo, OH	70,660	99.95	523	7.47-	45.4	0.312
Youngstown, OH	69,319	99.95	1,004	13.93+	37.7	0.517
Indiana	623,062	97.86	6,527	10.51+	53.3	0.553+
Anderson, IN	17,198	99.83	187	10.84	38.9	0.406
Bloomington, IN	7,913	99.87	56	8.42	78.9	0.631
Elkhart-Goshen, IN	15,647	99.92	127	8.20	79.2	0.642
Evansville, IN-KY	34,434	95.72	317	9.40	52.9	0.467
Fort Wayne, IN	37,565	97.77	524	14.17+	34.2	0.508
Gary-Hammond, IN	61,160	97.01	633	9.85	52.9	0.500
Indianapolis, IN	118,407	93.81	1,275	10.92+	66.4	0.742+
Kokomo, IN	10,842	99.94	133	12.23	54.5	0.647
Lafayette, IN	11,228	99.92	162	14.71+	51.6	0.720
Muncie, IN	13,759	99.91	107	7.82	30.7	0.219
South Bend, IN	33,170	99.93	279	8.46	38.9	0.301
Terre Haute, IN	19,585	99.89	272	14.35+	45.1	0.672
Illinois	1,265,011	95.90	11,696	9.35	49.2	0.449
Aurora-Elgin, IL	30,946	98.68	301	9.95	53.4	0.522
Bloomington, IL	12,672	99.94	114	9.36	62.1	0.560
Champaign, IL	13,391	99.91	123	9.31	66.1	0.529
Chicago, IL	608,135	92.94	5,434	9.00	45.4	0.402-
Decatur, IL	15,992	99.97	103	6.60-	54.1	0.316
Joliet, IL	28,047	97.18	279	9.86	34.0	0.320
Kankakee, IL	12,020	99.94	66	5.45-	32.7	0.166-
Lake County, IL	36,099	96.52	271	7.37-	57.5	0.388
Peoria, IL	43,549	99.93	498	11.55+	65.2	0.758
Rockford, IL	28,351	88.93	357	12.64+	68.8	0.886
Springfield, IL	24,799	99.96	322	13.49+	66.7	0.900

See notes at end of table.



Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	8,572	8.61-	53.9	0.470
Ann Arbor, MI	17,760	95.12	158	9.08	39.7	0.400
Battle Creek, MI	16,831	99.89	116	6.93	74.0	0.535
Benton Harbor, MI	21,618	99.88	364	16.59+	53.6	0.967
Detroit, MI	448,826	96.43	3,924	8.63	49.9	0.428
Flint, MI	43,084	91.01	361	8.42	49.2	0.396
Grand Rapids, MI	64,091	95.42	472	7.50-	85.1+	0.659
Jackson, MI	17,046	99.82	145	8.44	59.2	0.527
Kalamazoo, MI	21,512	99.85	221	10.43	61.3	0.703
Lansing, MI	32,460	90.23	275	8.65	37.2	0.342
Muskegon, MI	18,957	98.06	128	6.59-	102.4	0.734
Saginaw, MI	42,162	96.18	416	9.70	44.1	0.448
Wisconsin	611,044	99.60	5,989	9.90+	46.7	0.439
Appleton, WI	34,483	99.96	375	10.99	36.6	0.375
Eau Claire, WI	16,955	99.94	97	5.78-	94.3	0.528
Green Bay, WI	19,185	99.97	165	8.68	43.9	0.364
Janesville, WI	16,529	99.85	145	9.00	105.7	0.848
Kenosha, WI	14,291	99.91	195	13.62+	64.8	0.837
LaCrosse, WI	11,858	99.91	116	10.20	58.8	0.598
Madison, WI	30,776	99.74	358	11.93+	45.0	0.525
Milwaukee, WI	166,813	99.21	2,213	13.57+	36.7-	0.477
Racine, WI	20,503	99.90	258	12.66+	66.5	0.783
Sheboygan, WI	14,461	99.98	101	7.09	39.7	0.276
Wausau, WI	12,945	99.95	106	8.12	29.4	0.229
West North Central	2,156,545	93.50	20,222	9.74+	53.2	0.511
Minnesota	397,258	77.30	2,357	6.28-	51.9	0.318-
Duluth, MN-WI	29,977	76.74	158	5.42-	74.9	0.372
Minneapolis, MN-WI	141,769	64.45	816	6.33-	61.3	0.377
Rochester, MN	9,393	99.67	54	6.14	30.5	0.217
St. Cloud, MN	12,248	70.92	121	10.62	49.0	0.504
Iowa	404,057	99.37	3,562	9.16	60.9	0.549
Cedar Rapids, IA	19,323	99.94	279	14.79+	44.9	0.680
Davenport, IA-IL	44,646	99.94	295	6.67-	68.1	0.448
Des Moines, IA	40,067	94.50	571	14.84+	55.0	0.841
Dubuque, IA	11,460	99.95	53	4.81-	40.6	0.177
Iowa City, IA	6,240	99.90	29	4.84-	186.2	0.812
Sioux City, IA-NE	15,951	99.96	146	9.59	36.3	0.317
Waterloo, IA	19,521	99.96	114	5.93-	104.3	0.617

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	7,504	11.76+	50.7	0.589+
Columbia, MO	8,560	99.98	124	14.83+	45.9	0.707
Joplin, MO	19,275	99.95	235	12.35+	44.8	0.517
Kansas City, MO-KS	154,919	95.72	2,195	14.61+	49.5	0.731+
St. Joseph, MO	13,630	99.97	113	8.67	28.8	0.223
St. Louis, MO-IL	283,167	97.43	3,263	11.85+	46.5	0.545
Springfield, MO	27,676	99.94	298	11.02	33.5	0.363
North Dakota	85,433	98.28	916	10.86+	34.1-	0.358
Bismarck, ND	8,160	95.13	100	12.46	30.0	0.367
Fargo, ND-MN	14,138	96.57	145	10.74	34.6	0.358
Grand Forks, ND	5,667	99.95	73	13.33	27.7	0.354
South Dakota	96,216	99.59	645	6.90-	44.5	0.291-
Rapid City, SD	7,152	99.89	56	7.72	0.0	0.000
Sioux Falls, SD	13,275	99.93	104	8.07	38.1	0.306
Nebraska	209,910	98.52	1,155	5.76-	59.2	0.316-
Lincoln, NE	20,994	98.50	34	1.70-	99.9	0.145-
Omaha, NE-IA	57,609	95.39	526	9.42	70.1	0.616
Kansas	307,796	95.82	4,083	13.84+	55.6	0.789+
Lawrence, KS	4,965	87.78	46	9.74	20.3	0.205
Topeka, KS	18,983	97.26	301	16.80+	27.1-	0.483
Wichita, KS	45,844	88.57	673	15.14+	81.1+	1.307+
South	8,980,101	97.94	91,766	10.15+	48.1-	0.484
South Atlantic	4,668,855	96.31	44,198	9.34+	46.5-	0.431-
Delaware	70,251	99.94	538	7.46-	44.0	0.327
Wilmington, DE-NJ-MD	58,114	99.65	385	6.46-	38.9	0.240-
Maryland	436,606	99.49	3,090	6.98-	44.5	0.303-
Baltimore, MD	244,878	99.90	1,521	6.13-	48.0	0.289-
Cumberland, MD-WV	17,051	99.95	89	5.20-	24.8	0.117-
Hagerstown, MD	14,522	99.95	84	5.75-	62.7	0.344
District of Col.	66,196	99.75	464	7.40-	23.4-	0.186-
Washington, DC-MD-VA	261,121	99.05	2,063	7.87-	37.6-	0.290-

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Virginia	566,135	99.91	4,483	7.81-	40.5-	0.307-
Charlottesville, VA	12,020	99.92	96	8.01	10.2-	0.083-
Danville, VA	15,532	99.99	53	3.37-	0.0	0.000
Lynchburg, VA	18,110	99.99	92	5.15-	54.9	0.277
Norfolk, VA	102,601	99.96	877	8.31	44.2	0.361
Richmond, VA	85,698	99.98	1,113	12.98+	36.4-	0.470
Roanoke, VA	30,622	99.98	198	6.69-	59.7	0.396
West Virginia	244,259	98.98	1,909	7.78-	44.5	0.334-
Charleston, WV	34,215	99.96	414	11.91+	39.0	0.465
Huntington, WV-KY-OH	40,891	99.95	176	4.31-	56.4	0.220-
Parkersburg, WV-OH	19,888	99.94	105	5.36-	19.3	0.100-
Wheeling, WV-OH	22,016	82.51	184	8.52	24.5	0.183-
North Carolina	689,138	99.93	4,985	7.11-	59.3	0.411
Asheville, NC	24,469	99.92	141	5.87-	44.7	0.246
Burlington, NC	14,505	99.99	106	7.12	70.4	0.480
Charlotte, NC	109,337	99.79	894	8.05-	64.7	0.512
Fayetteville, NC	13,388	99.98	62	4.42-	32.0	0.149-
Greensboro, NC	99,387	99.97	860	8.58	60.2	0.504
Hickory, NC	23,392	99.97	146	6.05-	56.7	0.339
Jacksonville, NC	5,134	99.86	31	5.64	38.9	0.193
Raleigh-Durham, NC	56,484	99.86	371	6.59-	83.8	0.570
Wilmington, NC	12,634	99.97	92	7.07	11.3-	0.079-
South Carolina	329,020	99.44	3,237	9.54	45.4	0.418
Anderson, SC	16,583	99.70	151	8.89	29.6	0.240
Charleston, SC	34,246	98.90	326	9.16	57.8	0.495
Columbia, SC	35,361	99.98	444	12.20+	48.9	0.595
Florence, SC	11,195	99.96	113	9.82	36.5	0.358
Greenville, SC	65,893	98.01	707	10.50	53.1	0.544
Georgia	561,716	99.71	6,379	11.26+	35.5-	0.383-
Albany, GA	9,292	99.92	91	9.62	12.6-	0.108-
Athens, GA	13,510	99.96	154	11.46	36.7	0.372
Atlanta, GA	189,539	99.27	2,370	12.47+	31.9-	0.382
Augusta, GA-SC	32,938	99.93	450	13.31+	49.0	0.699
Columbus, GA-AL	22,847	99.96	185	7.90	36.9	0.307
Macon, GA	25,929	99.97	381	14.54+	46.8	0.661
Savannah, GA	25,338	99.94	271	10.49	30.0	0.315

See notes at end of table.



Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	19,113	11.05+	49.5	0.555+
Bradenton, FL	42,906	99.68	439	10.28	120.9+	1.374+
Daytona Beach, FL	62,616	92.90	786	12.39+	42.2	0.535
Fort Lauderdale, FL	181,839	81.09	2,511	14.32+	46.8	0.698+
Fort Myers, FL	61,428	99.65	528	7.96	39.0	0.298-
Fort Pierce, FL	41,198	99.28	355	7.95	45.8	0.351
FT. Walton Beach, FL	10,169	99.88	162	14.49+	60.2	0.870
Gainesville, FL	16,758	99.58	164	9.51	49.2	0.472
Jacksonville, FL	80,895	98.22	1,280	15.54+	53.5	0.852+
Lakeland, FL	55,495	99.56	561	9.70	45.7	0.440
Melbourne, FL	46,501	99.72	698	13.80+	77.8	1.107+
Miami-Hialeah, FL	168,502	79.57	1,441	9.20	46.0	0.451
Naples, FL	23,433	99.75	155	6.02-	43.2	0.244
Ocala, FL	31,367	99.50	298	8.59	59.8	0.522
Orlando, FL	90,604	98.55	1,361	14.60+	43.5	0.658
Panama City, FL	11,817	99.70	187	14.85+	39.2	0.580
Pensacola, FL	29,972	99.89	494	15.81+	67.7	1.092+
Sarasota, FL	77,895	99.81	906	11.38+	44.5	0.511
Tallahassee, FL	17,414	97.85	231	13.16+	40.8	0.573
Tampa, FL	323,951	87.05	2,795	8.73	41.3-	0.351-
West Palm Beach, FL	139,729	85.22	1,517	10.76+	43.2	0.454
East South Central	1,726,272	99.80	19,292	11.21+	46.9-	0.519
Kentucky	422,657	99.70	3,734	8.86	38.9-	0.323-
Lexington, KY	31,008	98.87	213	6.96-	24.0-	0.163-
Louisville, KY-IN	107,485	99.20	1,032	9.69	47.0	0.429
Owensboro, KY	10,319	99.96	125	12.16	8.9-	0.096-
Tennessee	550,327	99.65	6,533	11.85+	40.6-	0.477
Chattanooga, TN-GA	50,061	99.97	348	6.96-	25.7-	0.159-
Clarksville, TN-KY	12,541	99.91	126	10.08	15.8-	0.158-
Jackson, TN	10,064	99.95	160	16.54+	16.9-	0.300
Johnson City, TN-VA	55,068	99.97	381	6.80-	48.9	0.306
Knoxville, TN	70,970	99.96	836	11.65+	36.8	0.421
Memphis, TN-AR-MS	88,836	98.06	1,232	14.04+	42.9	0.611
Nashville, TN	92,994	99.96	1,163	12.61+	35.4-	0.451

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	6,509	14.04+	54.0	0.770+
Anniston, AL	13,124	99.97	202	15.06+	56.6	0.832
Birmingham, AL	108,546	99.98	1,697	15.82+	62.3	1.044+
Dothan, AL	12,690	99.94	298	23.26+	42.0	0.942
Florence, AL	16,687	99.97	342	20.15+	74.8	1.664+
Gadsden, AL	14,295	99.97	281	19.12+	78.0	1.525+
Huntsville, AL	17,137	99.96	154	8.72	42.2	0.349
Mobile, AL	50,513	99.96	593	11.45+	40.3	0.451
Montgomery, AL	29,832	99.97	348	11.79+	69.3	0.845
Tuscaloosa, AL	13,604	99.99	280	20.83+	43.2	0.960
Mississippi	290,157	99.98	2,516	8.82	56.1	0.478
Biiloxi-Gulfport, MS	18,079	99.97	179	9.49	58.7	0.547
Jackson, MS	35,305	99.98	246	7.13-	64.3	0.426
Pascagoula, MS	8,556	99.88	80	8.75	67.4	0.574
West South Central	2,584,974	99.74	28,276	10.92+	51.3	0.557+
Arkansas	321,739	99.96	3,969	12.29+	43.2-	0.528
Fayetteville, AR	11,803	99.95	179	15.16+	46.8	0.672
Fort Smith, AR-OK	21,413	99.98	145	6.75-	53.7	0.324
Little Rock, AR	50,966	99.99	777	15.33+	35.3	0.550
Pine Bluff, AR	11,012	99.98	53	4.94-	19.4	0.090-
Louisiana	415,968	99.98	5,058	12.22+	54.2	0.651+
Alexandria, LA	13,819	99.96	216	15.89+	87.9	1.386+
Baton Rouge, LA	39,583	99.97	554	13.74+	42.3	0.581
Houma-Thibodaux, LA	13,501	100.00	242	17.10+	63.6	1.102
Lafayette, LA	14,620	99.99	244	16.56+	36.9	0.617
Lake Charles, LA	16,436	99.98	145	8.49	54.2	0.420
Monroe, LA	14,648	99.99	64	4.49-	37.0	0.137-
New Orleans, LA	118,708	99.98	1,586	13.42+	67.6	0.913+
Shreveport, LA	36,822	99.98	423	11.83+	47.2	0.550
Oklahoma	378,716	99.02	4,012	10.77+	53.7	0.571
Enid, OK	8,215	99.94	42	5.33-	126.7	0.733
Lawton, OK	8,221	99.99	101	11.86	31.2	0.362
Oklahoma City, OK	88,646	97.45	1,105	12.77+	56.0	0.738+
Tulsa, OK	71,032	98.13	865	12.30+	53.5	0.651

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	15,237	10.30+	51.7	0.533+
Abilene, TX	13,100	99.96	180	14.06+	60.8	0.843
Amarillo, TX	19,063	99.97	154	8.03	39.3	0.312
Austin, TX	47,578	99.95	476	10.01	58.1	0.589
Beaumont, TX	42,323	99.98	663	15.42+	45.3	0.723
Brazoria, TX	12,486	99.78	172	12.98+	71.1	0.946
Brownsville, TX	20,169	99.86	211	9.94	76.9	0.767
Bryan, TX	6,955	99.96	52	7.56	40.4	0.287
Corpus Christi, TX	28,417	95.56	310	10.59	36.7	0.381
Dallas, TX	172,118	99.95	1,578	9.21	50.5	0.473
El Paso, TX	37,292	99.94	377	9.62	46.6	0.501
Fort Worth, TX	97,947	99.96	741	7.51-	68.5	0.470
Galveston, TX	19,376	99.94	219	10.87	46.1	0.509
Houston, TX	187,992	99.85	2,190	11.38+	46.6	0.545
Killeen-Temple, TX	17,182	99.97	145	8.40	72.6	0.580
Laredo, TX	8,421	99.99	40	4.75-	71.8	0.352
Longview, TX	20,547	99.98	155	7.69	69.0	0.535
Lubbock, TX	18,957	99.97	558	28.96+	23.9-	0.729
McAllen, TX	27,402	99.82	401	13.69+	61.8	0.876
Midland, TX	7,362	99.96	123	16.07+	37.6	0.673
Odessa, TX	9,207	99.99	124	12.69	18.1-	0.213
San Angelo, TX	11,213	99.99	154	13.83+	60.9	0.884
San Antonio, TX	107,989	99.28	1,052	9.64	65.7	0.665
Sherman-Denison, TX	14,532	99.99	115	8.04	82.6	0.619
Texas, TX-AR	15,315	99.99	153	10.19	41.1	0.390
Tyler, TX	18,223	99.98	187	10.14	46.5	0.435
Victoria, TX	6,871	99.97	79	11.12	65.9	0.715
Waco, TX	23,624	99.99	198	8.56	38.6	0.297
Wichita Falls, TX	14,462	99.97	132	9.36	56.3	0.488
West	4,539,951	93.08	41,776	9.03	53.1	0.500+
Mountain	1,200,638	94.36	11,705	9.40	47.9	0.451
Montana	97,248	99.90	1,277	12.77+	39.5	0.507
Billings, MT	12,097	99.88	145	11.67	28.0	0.327
Great Falls, MT	9,076	99.91	150	16.14+	26.1	0.436
Idaho	109,822	99.77	916	8.02-	29.6-	0.231-
Boise City, ID	18,471	99.90	158	8.35	20.1-	0.161-
Wyoming	42,408	99.91	373	8.60	36.6	0.303
Casper, WY	5,379	99.91	61	11.05	36.8	0.372
Cheyenne, WY	6,886	99.96	62	8.84	53.2	0.432

See notes at end of table.



Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1996

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	1,922	7.18-	47.5	0.333-
Boulder-Longmont, CO	15,143	97.96	80	5.43-	27.3	0.134-
Colorado Springs, CO	24,899	95.03	252	9.85	50.6	0.523
Denver, CO	119,624	94.10	707	5.93-	40.0	0.227-
Fort Collins, CO	15,089	99.71	146	9.63	58.3	0.593
Greeley, CO	11,610	99.62	120	10.26	55.6	0.596
Pueblo, CO	15,372	94.43	144	9.26	65.0	0.580
New Mexico	125,371	92.49	1,263	9.77	48.9	0.479
Albuquerque, NM	33,783	81.01	361	10.54	49.6	0.534
Las Cruces, NM	9,375	99.94	106	10.64	37.0	0.417
Santa Fe, NM	8,454	93.66	52	5.99	43.9	0.234
Arizona	348,748	91.33	3,670	10.00+	53.0	0.535
Phoenix, AZ	187,381	86.74	2,143	11.07+	45.8	0.510
Tucson, AZ	70,550	96.06	759	10.42	74.5	0.794+
Utah	128,579	99.92	1,547	11.68+	49.1	0.580
Provo-Orem, UT	16,076	99.93	255	15.25+	47.2	0.788
Salt Lake City, UT	77,243	99.94	900	11.38+	52.1	0.588
Nevada	81,799	86.15	737	8.13	62.2	0.522
Las Vegas, NV	45,252	82.98	423	8.37	60.7	0.514
Reno, NV	19,133	69.17	177	8.50	56.0	0.512
Pacific	3,339,313	92.62	30,071	8.89-	55.0	0.517+
Washington	461,706	92.41	3,602	7.69-	51.0	0.405
Bellingham, WA	13,629	99.51	58	4.27-	60.6	0.292
Bremerton, WA	15,439	96.59	106	6.73	52.7	0.385
Olympia, WA	14,254	90.98	163	11.35	29.6	0.349
Richland, WA	12,559	99.85	117	8.68	17.8-	0.155-
Seattle, WA	159,828	86.57	1,134	7.11-	55.7	0.409
Spokane, WA	41,237	94.51	387	9.50	49.8	0.488
Tacoma, WA	50,245	97.24	411	8.01	54.2	0.455
Vancouver, WA	17,048	80.32	128	7.40	15.6-	0.117-
Yakima, WA	22,738	99.74	173	7.52	100.5	0.823
Oregon	303,778	86.84	2,059	6.70-	55.6	0.383
Eugene, OR	28,947	88.67	69	2.33-	66.6	0.171-
Medford, OR	20,326	99.78	176	8.29	48.6	0.385
Portland, OR	99,155	72.79	813	8.58	70.2	0.629
Salem, OR	33,249	90.39	155	4.75-	39.6	0.180-

See notes at end of table.

Table 3. Cardiac catheterization: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	23,754	9.50+	55.2	0.557+
Anaheim-Santa Ana, CA	167,171	89.39	1,757	10.73+	62.2	0.727+
Bakersfield, CA	44,969	99.76	572	12.04+	46.3	0.607
Chico, CA	27,102	99.09	357	12.61+	42.5	0.541
Fresno, CA	58,425	99.90	667	11.27+	69.5	0.830+
Los Angeles, CA	677,939	91.40	6,107	9.10	55.6	0.546
Merced, CA	13,462	99.86	142	10.00	51.1	0.509
Modesto, CA	33,619	98.80	515	14.96+	30.7-	0.440
Oakland, CA	188,258	99.08	1,723	9.11	62.9	0.622+
Orland-Ventura, CA	49,488	93.74	368	7.30-	46.7	0.361
Redding, CA	17,796	99.73	206	10.78	26.5	0.273
Riverside, CA	203,246	90.92	1,852	8.88	33.6-	0.315-
Sacramento, CA	120,273	91.81	1,238	9.92	68.4	0.733+
Salinas, CA	29,131	99.86	217	7.29	84.8	0.611
San Diego, CA	205,402	91.35	2,079	9.93	44.3	0.478
San Francisco, CA	163,753	89.02	1,123	7.03-	67.3	0.504
San Jose, CA	105,258	99.50	917	8.63	63.7	0.553
Santa Barbara, CA	38,021	99.70	401	10.64	82.4	1.023+
Santa Cruz, CA	24,640	99.77	163	6.81-	44.0	0.323
Santa Rosa, CA	44,775	99.49	434	9.70	61.3	0.574
Stockton, CA	40,855	91.54	571	13.64+	53.0	0.696
Vallejo, CA	35,778	98.59	433	11.85+	46.1	0.608
Visalia, CA	28,811	99.91	262	8.85	50.7	0.474
Yuba City, CA	11,835	99.35	187	14.94+	54.3	0.822
Alaska	16,348	99.78	94	5.10-	93.2	0.531
Anchorage, AK	5,625	99.75	39	6.09	92.4	0.691
Hawaii	80,233	83.64	562	6.40-	65.7	0.429
Honolulu, HI	57,680	83.31	433	6.84-	63.3	0.450

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Permanent cardiac pacemaker implantation

Pacemakers are used for patients whose cardiac electrical conduction fails to function properly. Hospital stays for permanent cardiac pacemaker implantation among the aged Medicare population accounted for 59,588 stays in 1986, a rate of 2.23 discharges per 1,000 enrollees. The 30-day post-admission death rate per 1,000 discharges was 37.6, or approximately 4 percent of all pacemaker implantation discharges (Table 1).

## Age and sex patterns

Heart disease is more prevalent among men than among women. In each age group, the rate of hospitalization for pacemaker implantation was more than 40 percent greater for men than for women. The rate of discharges per 1,000 enrollees increased with age for both sexes. Men had a higher 30-day post-admission death rate than women across all age groups.

## Patterns by race

Overall, black persons had a discharge rate of 1.90 per 1,000 enrollees compared with 2.28 for white persons. Black persons had fewer discharges for permanent cardiac pacemaker implantation per 1,000 enrollees than white persons across all age-sex groups except 65-74 years, where the rate for black women was higher than that for white

women. The difference between the rate for white men (6.61) and that for black men (3.96) reached 67 percent in the age group 85 years of age or over.

Except for persons 85 years of age or over, the 30-day post-admission death rate per 1,000 discharges was higher for black men and women than for white men and women. The death rate for white men 85 years of age or over was 37 percent higher than the rate for black men, whereas the death rate for white women in this age group was only 6 percent higher than the rate for black women.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

Geographically, States with the highest discharge rates per 1,000 enrollees were scattered throughout the country, with the highest number located in the South (Figure 1). The States with the lowest discharge rates per 1,000 enrollees were also scattered throughout the country, but the highest number was located in the West.

Discharge rates by State ranged from a high of 3.00 discharges per 1,000 enrollees in Oklahoma to a low of 1.39 in Hawaii (Table 2). The variation in discharge rates by MSAs and rural areas across and within U.S. census divisions is shown in Figure 2. The highest median discharge rate per 1,000 enrollees was in the West South Central Division and the lowest median discharge rate per 1,000 enrollees was in the Mountain Division. The correlation coefficient computed between discharges per 1,000 enrollees and 30-day post-admission deaths per 1,000 discharges was not significant.

## Urban-rural patterns

In the United States as a whole, the discharge rate for permanent cardiac pacemaker implantation was a little lower for rural areas than for all MSAs combined. Conversely, the 30-day post-admission death rate per 1,000 discharges was slightly higher for rural areas than for all MSAs combined. This same pattern held true for the North Central Region and the South; but in the Northeast and the West, the death rate was lower in the rural areas than in all MSAs combined.

NOTE: Permanent cardiac pacemaker implantation is in diagnosis-related groups 115, 116.



Table 1. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

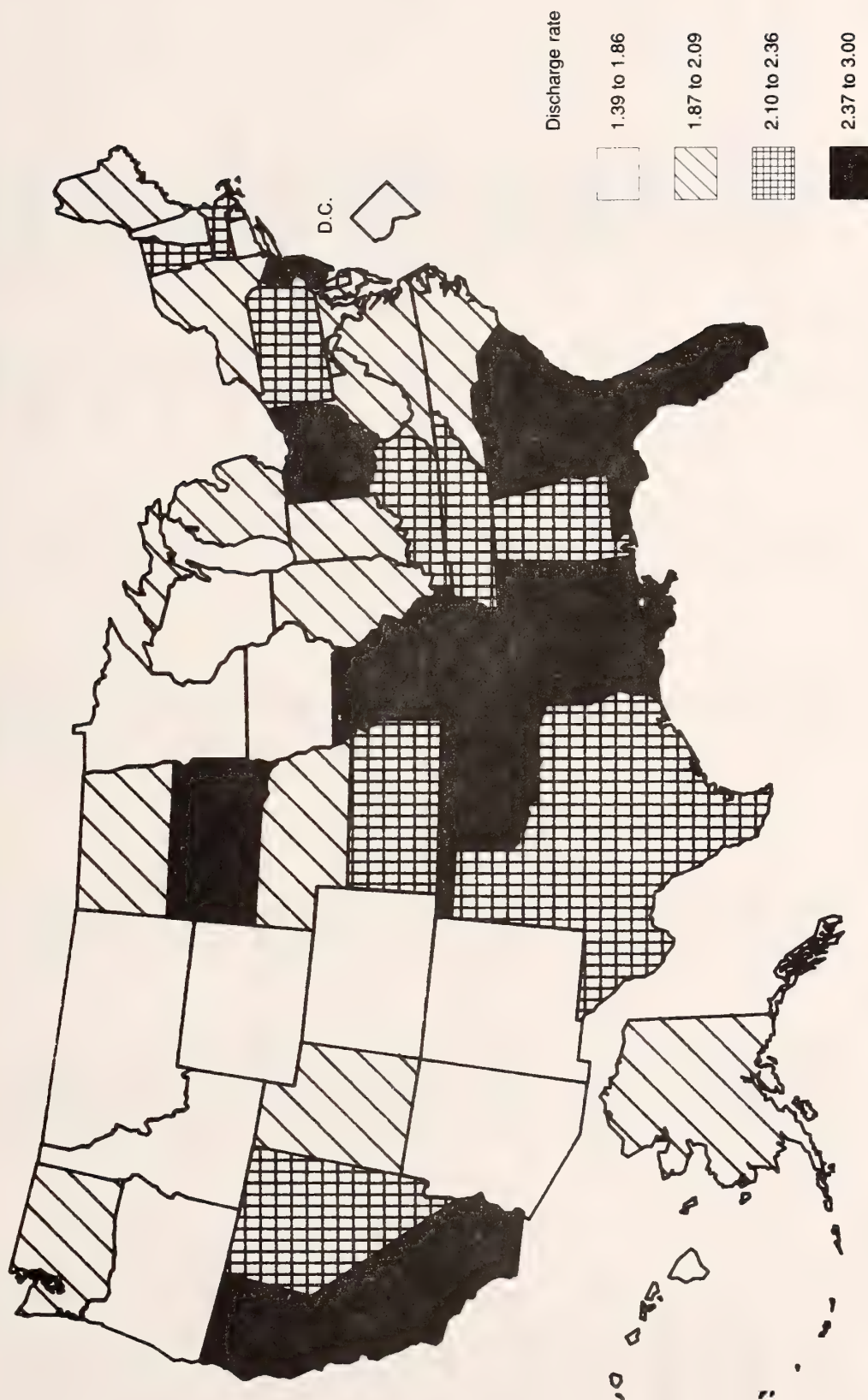
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	59,588	2.23	37.6	0.083
65-74 years	16,162,594	96.33	20,404	1.26	29.2	0.036
75-84 years	8,020,447	96.96	27,590	3.44	37.9	0.130
85 years or over	2,515,883	98.32	11,594	4.61	51.4	0.236
Men	10,650,991	96.01	27,412	2.57	41.8	0.107
65-74 years	7,056,445	95.90	10,739	1.52	30.6	0.046
75-84 years	2,912,366	96.02	12,379	4.25	45.8	0.194
85 years or over	682,180	97.22	4,294	6.29	58.5	0.367
Women	16,047,933	97.16	32,176	2.00	33.9	0.067
65-74 years	9,106,149	96.66	9,665	1.06	27.5	0.029
75-84 years	5,108,081	97.51	15,211	2.98	31.6	0.093
85 years or over	1,833,703	98.74	7,300	3.98	47.3	0.188
White	23,574,066	96.62	53,770	2.28	37.4	0.085
65-74 years	14,207,064	96.23	18,242	1.28	28.4	0.036
75-84 years	7,134,499	96.88	24,958	3.50	37.7	0.131
85 years or over	2,232,503	98.26	10,570	4.73	52.1	0.246
Men	9,391,016	95.94	25,005	2.66	41.6	0.110
65-74 years	6,216,472	95.83	9,774	1.57	29.8	0.046
75-84 years	2,573,989	95.94	11,262	4.38	45.4	0.198
85 years or over	600,555	97.12	3,969	6.61	59.7	0.394
Women	14,183,050	97.07	28,765	2.03	33.8	0.068
65-74 years	7,990,592	96.55	8,468	1.06	26.8	0.028
75-84 years	4,560,510	97.42	13,696	3.00	31.4	0.094
85 years or over	1,631,948	98.69	6,601	4.04	47.6	0.192
Black	1,991,943	97.86	3,791	1.90	39.6	0.075
65-74 years	1,213,014	97.54	1,357	1.12	38.3	0.042
75-84 years	583,429	98.11	1,693	2.90	38.4	0.111
85 years or over	195,500	99.11	741	3.79	44.5	0.168
Men	792,788	97.49	1,426	1.80	44.2	0.079
65-74 years	519,305	97.28	537	1.03	39.1	0.040
75-84 years	215,401	97.67	659	3.06	48.6	0.148
85 years or over	58,082	98.74	230	3.96	43.5	0.172
Women	1,199,155	98.10	2,365	1.97	36.8	0.072
65-74 years	693,709	97.74	820	1.18	37.8	0.044
75-84 years	368,028	98.37	1,034	2.81	31.9	0.089
85 years or over	137,418	99.26	511	3.72	45.0	0.167

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

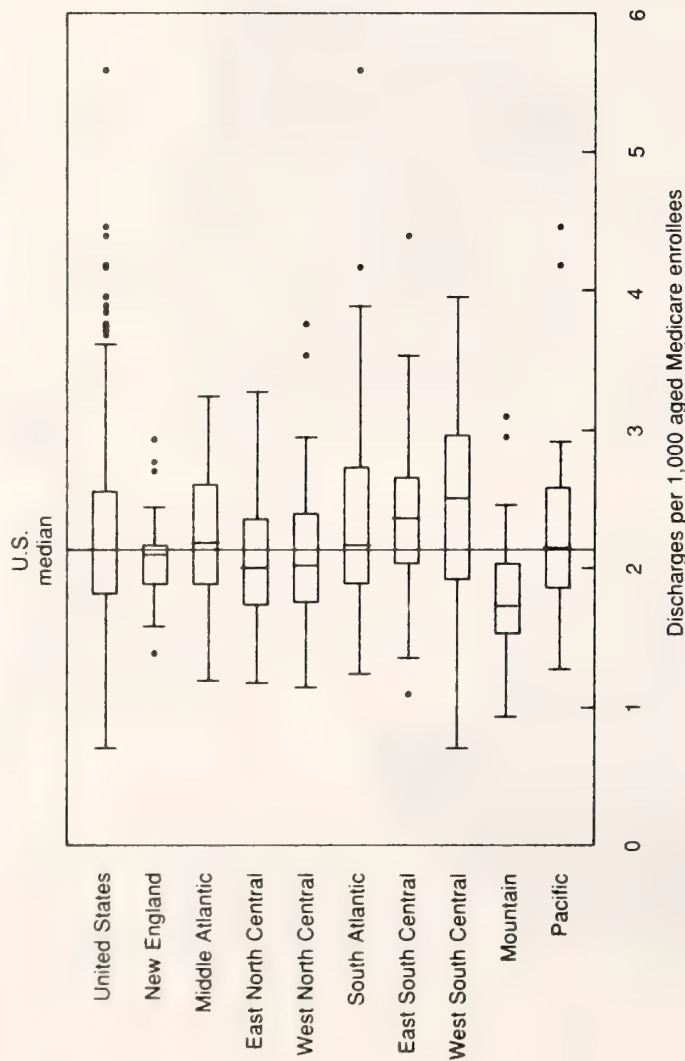
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 1. Permanent cardiac pacemaker implantation: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Permanent cardiac pacemaker implantation: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Lafayette, LA	3.69
	Enid, OK	3.71
	Galveston, TX	3.75
	Rapid City, SD	3.78
	Alexandria, LA	3.84
	Miami-Hialeah, FL	3.89
	Odessa, TX	3.96
	Augusta, GA-SC	4.17
	Bakersfield, CA	4.19
	Jackson, TN	4.40
	Merced, CA	4.45
	Florence, SC	5.59
New England	Rural counties, CT	1.39
	Worcester, MA	2.70
	Pittsfield, MA	2.77
	Burlington, VT	2.93
West North Central	Columbia, MO	3.54
	Rapid City, SD	3.78
South Atlantic	Augusta, GA-SC	4.17
	Florence, SC	5.59
East South Central	Owensboro, KY	1.08
	Jackson, TN	4.40
Mountain	Billings, MT	2.95
	Provo-Orem, UT	3.10
Pacific	Bakersfield, CA	4.19
	Merced, CA	4.45

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	59,588	2.23	37.6	0.083
Metropolitan	19,363,284	95.80	43,690	2.27	37.0	0.083
Rural	7,335,640	99.16	15,898	2.14-	39.0	0.082
Northeast	6,276,897	98.04	13,645	2.17	39.0	0.085
Metropolitan	5,564,648	97.84	12,159	2.18	39.3	0.086
Rural	712,249	99.59	1,486	2.08	35.8	0.074
New England	1,569,313	96.20	3,290	2.07-	36.1	0.075
Metropolitan	1,342,886	95.66	2,819	2.08	35.0	0.073
Rural	226,427	99.53	471	2.05	42.7	0.086
Maine	153,209	99.88	313	2.00	50.9	0.101
Metropolitan	82,345	99.89	176	2.11	49.2	0.107
Rural	70,864	99.87	137	1.88	53.3	0.094
New Hampshire	114,752	98.98	214	1.86	42.9	0.078
Metropolitan	74,135	98.55	132	1.78	46.1	0.080
Rural	40,617	99.77	82	2.01	37.7	0.073
Vermont	62,781	99.82	145	2.27	41.0	0.093
Metropolitan	10,422	99.91	31	2.93	32.1	0.094
Rural	52,359	99.80	114	2.13	43.4	0.093
Massachusetts	709,478	93.75	1,607	2.22	38.6	0.085
Metropolitan	659,025	93.40	1,486	2.20	38.5	0.085
Rural	50,453	98.58	121	2.39	40.1	0.099
Rhode Island	132,332	97.59	278	2.10	24.8	0.052
Metropolitan	132,332	97.59	278	2.10	24.8	0.052
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	733	1.86-	25.6	0.047-
Metropolitan	384,627	97.50	716	1.87-	26.2	0.049-
Rural	12,134	99.66	17	1.39	0.0	0.000
Middle Atlantic	4,707,584	98.68	10,355	2.20	39.9	0.088
Metropolitan	4,221,762	98.55	9,340	2.22	40.7	0.090
Rural	485,822	99.76	1,015	2.09	32.6	0.067
New York	2,143,249	98.98	4,224	1.93-	36.5	0.071
Metropolitan	1,922,371	98.89	3,768	1.92-	36.5	0.071
Rural	220,878	99.75	456	2.03	36.8	0.074

See notes at end of table.

Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	2,334	2.60+	42.7	0.112+
Metropolitan	916,155	97.84	2,334	2.60+	42.7	0.112+
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	3,797	2.35	41.9	0.097
Metropolitan	1,383,236	98.56	3,238	2.39	44.1	0.105
Rural	264,944	99.78	559	2.14	29.2	0.061
North Central	6,901,975	96.39	14,796	2.11-	38.0	0.079
Metropolitan	4,398,761	95.22	9,617	2.19	37.6	0.082
Rural	2,503,214	98.51	5,179	1.99-	38.6	0.075
East North Central	4,745,430	97.76	10,083	2.13-	38.4	0.081
Metropolitan	3,453,558	97.13	7,463	2.18	38.3	0.083
Rural	1,291,872	99.47	2,620	2.00-	38.5	0.076
Ohio	1,263,869	99.46	3,153	2.53+	39.7	0.100
Metropolitan	987,528	99.60	2,461	2.54+	41.8	0.106
Rural	276,341	98.95	692	2.49	32.1	0.078
Indiana	623,062	97.86	1,160	1.87-	49.9	0.091
Metropolitan	399,457	97.01	726	1.83-	43.7	0.078
Rural	223,605	99.41	434	1.93	60.0	0.115
Illinois	1,265,011	95.90	2,654	2.09	40.6	0.084
Metropolitan	952,934	94.73	2,047	2.16	38.1	0.082
Rural	312,077	99.68	607	1.88-	49.1	0.091
Michigan	982,444	96.86	2,016	2.09	26.2-	0.054-
Metropolitan	744,347	96.06	1,536	2.10	26.5-	0.056-
Rural	238,097	99.44	480	2.04	25.2	0.051
Wisconsin	611,044	99.60	1,100	1.76-	39.4	0.069
Metropolitan	369,292	99.43	693	1.84-	47.2	0.087
Rural	241,752	99.86	407	1.63-	26.4	0.043-
West North Central	2,156,545	93.50	4,713	2.08-	37.1	0.076
Metropolitan	945,203	88.82	2,154	2.21	35.3	0.078
Rural	1,211,342	97.51	2,559	1.98-	38.7	0.075
Minnesota	397,258	77.30	749	1.77-	46.3	0.082
Metropolitan	187,915	67.07	364	1.83-	31.7	0.058
Rural	209,343	89.55	385	1.71-	60.3	0.102

See notes at end of table.

Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Iowa						
Metropolitan	404,057	99.37	725	1.71-	34.9	0.059
Rural	136,818	98.24	297	2.12	42.2	0.092
	267,239	99.96	428	1.50-	29.8	0.044-
Missouri						
Metropolitan	655,875	98.17	1,628	2.41	35.0	0.082
Rural	383,255	96.99	946	2.41	27.5	0.065
	272,620	99.88	682	2.40	45.5	0.106
North Dakota						
Metropolitan	85,433	98.28	182	2.01	32.4	0.064
Rural	22,964	98.14	58	2.41	33.1	0.082
	62,469	98.34	124	1.87	32.1	0.058
South Dakota						
Metropolitan	96,216	99.59	266	2.60	29.1	0.076
Rural	20,427	99.92	51	2.44	56.0	0.141
	75,789	99.51	215	2.64	22.6	0.058
Nebraska						
Metropolitan	209,910	98.52	438	1.95	29.1	0.055
Rural	70,076	95.86	158	2.19	38.5	0.082
	139,834	99.91	280	1.84	24.1	0.044
Kansas						
Metropolitan	307,796	95.82	725	2.23	43.4	0.095
Rural	123,748	93.24	280	2.22	53.7	0.118
	184,048	97.63	445	2.24	37.2	0.083
South						
Metropolitan	8,980,101	97.94	21,403	2.40+	38.7	0.092
Rural	5,757,016	96.87	13,825	2.43+	37.0	0.089
	3,223,085	99.91	7,578	2.35+	42.0	0.097
South Atlantic						
Metropolitan	4,668,855	96.31	10,938	2.39+	41.3	0.097+
Rural	3,313,125	94.94	7,956	2.44+	38.5	0.093
	1,355,730	99.84	2,982	2.26	48.8+	0.109+
Delaware						
Metropolitan	70,251	99.94	148	2.19	110.9+	0.239+
Rural	44,355	99.95	84	1.97	86.5	0.165
	25,896	99.94	64	2.57	142.0	0.366
Maryland						
Metropolitan	436,606	99.49	835	1.97	51.4	0.102
Rural	395,091	99.44	757	1.98	50.1	0.100
	41,515	99.95	78	1.89	64.8	0.121
District of Col.						
Metropolitan	66,196	99.75	123	1.79	54.8	0.099
Rural	66,196	99.75	123	1.79	54.8	0.099
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.



Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, state, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,147	2.08	50.0	0.104
	355,193	99.87	738	2.15	50.7	0.109
	210,942	99.97	409	1.97	48.9	0.096
West Virginia	244,259	98.98	473	1.95	43.1	0.081
	90,704	97.39	179	2.00	47.4	0.090
	153,555	99.95	294	1.91	40.7	0.077
North Carolina	689,138	99.93	1,355	2.05	56.0+	0.113
	346,905	99.89	662	1.98	37.5	0.073
	342,233	99.96	693	2.11	73.5+	0.155+
South Carolina	329,020	99.44	906	2.92+	32.0	0.092
	186,873	99.05	484	2.75+	29.7	0.081
	142,147	99.95	422	3.13+	34.6	0.106
Georgia	561,716	99.71	1,298	2.39	40.5	0.094
	313,319	99.54	723	2.40	52.7	0.125
	248,397	99.93	575	2.37	25.2	0.058
Florida	1,705,534	90.97	4,653	2.72+	32.4	0.087
	1,514,489	90.04	4,206	2.75+	31.3	0.086
	191,045	99.17	447	2.43	43.0	0.105
East South Central	1,726,272	99.80	3,983	2.30	35.2	0.079
	873,594	99.64	1,984	2.30	33.4	0.075
	852,678	99.97	1,999	2.31	37.0	0.083
Kentucky	422,657	99.70	980	2.31	34.1	0.077
	183,264	99.37	447	2.45	22.6	0.054
	239,393	99.96	533	2.20	43.8	0.094
Tennessee	550,327	99.65	1,261	2.30	34.4	0.079
	342,007	99.46	761	2.24	37.1	0.082
	208,320	99.96	500	2.40	30.3	0.072
Alabama	463,131	99.97	1,000	2.18	31.7	0.067
	281,960	99.97	617	2.23	38.3	0.083
	181,171	99.97	383	2.10	21.2	0.043
Mississippi	290,157	99.98	742	2.49	42.8	0.102
	66,363	99.96	159	2.43	26.4	0.061
	223,794	99.98	583	2.51	47.1	0.113

See notes at end of table.

Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central	2,584,974	99.74	6,482	2.49+	36.6	0.089
Metropolitan	1,570,297	99.59	3,885	2.50+	35.7	0.088
Rural	1,014,677	99.97	2,597	2.48+	37.9	0.092
Arkansas	321,739	99.96	822	2.52	43.8	0.109
Metropolitan	100,966	99.98	250	2.46	44.3	0.107
Rural	220,773	99.95	572	2.55	43.6	0.110
Louisiana	415,968	99.98	1,156	2.76+	42.2	0.113
Metropolitan	268,137	99.98	744	2.80+	39.7	0.109
Rural	147,831	99.99	412	2.68	46.5	0.120
Oklahoma	378,716	99.02	1,167	3.00+	34.4	0.101
Metropolitan	180,038	98.00	584	3.21+	32.5	0.104
Rural	198,678	99.96	583	2.82+	36.4	0.099
Texas	1,468,551	99.81	3,337	2.27	33.7	0.075
Metropolitan	1,021,156	99.73	2,307	2.29	34.3	0.078
Rural	447,395	99.97	1,030	2.23	32.2	0.070
West	4,539,951	93.08	9,744	2.16	32.4-	0.070-
Metropolitan	3,642,859	91.96	8,089	2.23	33.0	0.073
Rural	897,092	97.88	1,655	1.87-	29.8	0.055-
Mountain	1,200,638	94.36	2,122	1.80-	32.4	0.058-
Metropolitan	720,893	92.10	1,268	1.81-	32.8	0.058-
Rural	479,745	97.98	854	1.80-	31.8	0.057
Montana	97,248	99.90	181	1.86	49.0	0.092
Metropolitan	21,173	99.90	44	2.11	22.9	0.048
Rural	76,075	99.91	137	1.79	57.2	0.104
Idaho	109,822	99.77	194	1.78	10.5-	0.018-
Metropolitan	18,471	99.90	38	2.10	27.4	0.055
Rural	91,351	99.74	156	1.71	6.5-	0.010-
Wyoming	42,408	99.91	76	1.79	26.3	0.047
Metropolitan	12,265	99.93	16	1.33	60.3	0.083
Rural	30,143	99.89	60	1.98	16.8	0.032
Colorado	266,663	94.73	434	1.62-	29.4	0.048-
Metropolitan	201,737	95.23	308	1.53-	32.1	0.049
Rural	64,926	93.22	126	1.89	22.9	0.044

See notes at end of table.

Table 2. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, state, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Mexico	125,371	92.49	197	1.58-	21.0	0.031-
Metropolitan	51,612	85.86	70	1.39-	0.0	0.000
Rural	73,759	97.76	127	1.71	33.3	0.053
Arizona	348,748	91.33	603	1.80-	35.6	0.064
Metropolitan	257,931	89.11	468	1.87-	37.1	0.068
Rural	90,817	98.31	135	1.60-	30.2	0.049
Utah	128,579	99.92	262	2.06	46.6	0.094
Metropolitan	93,319	99.94	187	2.04	49.3	0.098
Rural	35,260	99.88	75	2.12	40.0	0.085
Nevada	81,799	86.15	175	2.36	29.6	0.070
Metropolitan	64,385	84.73	137	2.36	15.3	0.036
Rural	17,414	91.83	38	2.37	77.6	0.194
Pacific	3,339,313	92.62	7,622	2.29	32.4	0.074
Metropolitan	2,921,966	91.93	6,821	2.33	33.0	0.078
Rural	417,347	97.77	801	1.95-	27.8	0.053-
Washington	461,706	92.41	899	1.95-	30.9	0.060
Metropolitan	346,977	90.86	671	1.93-	29.6	0.057
Rural	114,729	97.42	228	2.00	34.6	0.069
Oregon	303,778	86.84	484	1.58-	30.8	0.049-
Metropolitan	181,677	80.38	280	1.51-	21.1	0.032-
Rural	122,101	98.65	204	1.71-	44.2	0.075
California	2,477,248	93.71	6,099	2.47+	32.5	0.081
Metropolitan	2,330,007	93.36	5,786	2.48+	33.7	0.084
Rural	147,241	99.57	313	2.18	9.8-	0.021-
Alaska	16,348	99.78	31	2.09	35.7	0.069
Metropolitan	5,625	99.75	9	1.88	0.0	0.000
Rural	10,723	99.80	22	2.19	50.9	0.100
Hawaii	80,233	83.64	109	1.39-	46.1	0.064
Metropolitan	57,680	83.31	75	1.36-	52.9	0.073
Rural	22,553	84.47	34	1.48	30.5	0.043

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
United States	26,698,924	96.70	59,588	2.23	37.6	0.083
Northeast	6,276,897	98.04	13,645	2.17	39.0	0.085
New England	1,569,313	96.20	3,290	2.07-	36.1	0.075
Maine	153,209	99.88	313	2.00	50.9	0.101
Bangor, ME	16,035	99.87	31	1.90	95.6	0.183
Lewiston-Auburn, ME	13,464	99.93	29	2.11	62.0	0.144
Portland, ME	52,846	99.89	116	2.17	33.5	0.074
New Hampshire	114,752	98.98	214	1.86	42.9	0.078
Manchester, NH	44,397	97.91	83	1.85	72.9	0.134
Portsmouth, NH	29,738	99.52	49	1.67	0.0	0.000
Vermont	62,781	99.82	145	2.27	41.0	0.093
Burlington, VT	10,422	99.91	31	2.93	32.1	0.094
Massachusetts	709,478	93.75	1,607	2.22	38.6	0.085
Boston, MA	429,794	95.67	933	2.11	32.8	0.069
New Bedford, MA	65,540	98.67	159	2.45	37.0	0.092
Pittsfield, MA	20,281	91.00	57	2.77	67.7	0.192
Springfield, MA	72,225	92.57	139	1.91	50.7	0.095
Worcester, MA	71,185	79.42	198	2.70	49.8	0.134
Rhode Island	132,332	97.59	278	2.10	24.8	0.052
Providence, RI	132,332	97.59	278	2.10	24.8	0.052
Connecticut	396,761	97.56	733	1.86-	25.6	0.047-
Bridgeport, CT	96,911	96.63	205	2.13	24.2	0.051
Hartford, CT	157,139	99.16	294	1.88	20.6	0.038-
New Haven, CT	102,964	95.31	163	1.59-	35.3	0.058
New London, CT	27,613	99.70	54	2.00	34.7	0.074

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Middle Atlantic	4,707,584	98.68	10,355	2.20	39.9	0.088		
New York	2,143,249	98.98	4,224	1.93-	36.5	0.071		
Albany, NY	115,122	98.78	216	1.86	22.9	0.043		
Binghamton, NY	35,576	99.96	42	1.18-	23.2	0.028		
Buffalo, NY	134,451	98.66	300	2.29	52.6	0.123		
Elmira, NY	13,699	99.94	20	1.46	0.0	0.000		
Glens Falls, NY	15,222	99.63	33	2.14	56.9	0.129		
Nassau-Suffolk, NY	297,143	99.88	594	2.05	45.1	0.093		
New York, NY	997,473	99.58	1,921	1.84-	33.0	0.062		
Niagara Falls, NY	30,841	99.69	95	3.22	22.2	0.068		
Orange County, NY	30,488	99.89	71	2.32	83.9	0.195		
Poughkeepsie, NY	27,864	98.47	84	2.95	12.2	0.034		
Rochester, NY	102,542	88.80	197	1.89	19.4	0.038-		
Syracuse, NY	75,217	99.92	115	1.54-	62.1	0.094		
Utica-Rome, NY	46,733	99.90	80	1.73	48.8	0.086		
New Jersey	916,155	97.84	2,334	2.60+	42.7	0.112+		
Atlantic City, NJ	46,406	97.93	97	2.06	20.5	0.042		
Bergen-Passaic, NJ	171,246	99.45	392	2.32	55.4	0.131		
Jersey City, NJ	64,069	99.25	146	2.33	41.9	0.096		
Middlesex, NJ	91,009	94.70	266	3.12+	38.6	0.120		
Monmouth-Ocean, NJ	154,643	99.57	325	2.12	33.5	0.072		
Newark, NJ	211,511	99.40	652	3.10+	37.7	0.119		
Trenton, NJ	38,499	97.14	98	2.61	84.8	0.214		
Vineland, NJ	16,382	96.17	36	2.26	29.9	0.064		
Pennsylvania	1,648,180	98.75	3,797	2.35	41.9	0.097		
Allentown, PA-NJ	94,668	99.09	257	2.80	42.9	0.121		
Altoona, PA	20,692	99.99	48	2.32	118.1	0.287		
Beaver County, PA	27,562	99.95	73	2.83	40.6	0.118		
Erie, PA	35,244	99.92	82	2.43	89.9	0.209		
Harrisburg, PA	72,929	99.95	135	1.89	53.6	0.097		
Johnstown, PA	40,260	99.97	103	2.68	62.8	0.158		
Lancaster, PA	48,045	99.93	138	2.80	28.1	0.080		
Philadelphia PA-NJ	569,054	95.81	1,296	2.30	37.8	0.087		
Pittsburgh, PA	323,494	99.06	85	2.85+	47.0	0.135		
Reading, PA	48,476	99.88	264	1.75	12.5	0.020-		
Scranton, PA	122,888	99.95	39	2.23	42.9	0.094		
Sharon, PA	19,009	99.97	16	2.10	52.7	0.108		
State College, PA	10,032	99.97	32	1.62	61.6	0.101		
Williamsport, PA	16,877	99.98	81	1.88	0.0	0.000		
York, PA	48,541	99.96		1.68	49.6	0.083		

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	NCA-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	6,901,975	96.39	14,796	2.11-	38.0	0.079-
East North Central	4,745,430	97.76	10,083	2.13-	38.4	0.081
Ohio	1,263,869	99.46	3,153	2.53+	39.7	0.100
Akron, OH	75,615	99.90	169	2.28	54.5	0.122
Canton, OH	51,895	99.97	127	2.51	48.8	0.118
Cincinnati, OH-KY-IN	159,407	99.96	419	2.62	35.6	0.093
Cleveland, OH	242,585	99.71	591	2.51	30.2	0.077
Columbus, OH	121,377	99.73	279	2.33	47.7	0.109
Dayton, OH	103,547	99.95	269	2.65	44.8	0.118
Hamilton, OH	26,009	99.95	50	1.94	81.7	0.155
Lima, OH	19,579	99.97	64	3.26	31.4	0.101
Lorain-Elyria, OH	27,340	99.85	47	1.81	45.5	0.079
Mansfield, OH	15,230	99.96	32	2.16	62.4	0.137
Steubenville, OH-WV	21,934	98.57	56	2.69	55.3	0.146
Toledo, OH	70,660	99.95	222	3.15+	42.2	0.128
Youngstown, OH	69,319	99.95	173	2.63	40.5	0.107
Indiana	623,062	97.86	1,160	1.87-	49.9	0.091
Anderson, IN	17,198	99.83	20	1.19-	53.9	0.060
Bloomington, IN	7,913	99.87	19	2.39	54.3	0.125
Elkhart-Goshen, IN	15,647	99.92	24	1.52	43.1	0.062
Evansville, IN-KY	34,434	95.72	46	1.32-	0.0	0.000
Fort Wayne, IN	37,565	97.77	93	2.45	44.3	0.105
Gary-Hammond, IN	61,160	97.01	115	2.00	54.9	0.107
Indianapolis, IN	118,407	93.81	211	1.79	33.4	0.059
Kokomo, IN	10,842	99.94	26	2.44	77.9	0.188
Lafayette, IN	11,228	99.92	16	1.40	136.5	0.173
Muncie, IN	13,759	99.91	19	1.40	48.0	0.074
South Bend, IN	33,170	99.93	64	1.93	15.8	0.030
Terre Haute, IN	19,585	99.89	27	1.37	0.0	0.000
Illinois	1,265,011	95.90	2,654	2.09	40.6	0.084
Aurora-Eligin, IL	30,946	98.68	52	1.66	19.0	0.031
Bloomington, IL	12,672	99.94	27	2.06	71.8	0.150
Champaign, IL	13,391	99.91	30	2.23	71.2	0.148
Chicago, IL	608,135	92.94	1,338	2.22	40.7	0.091
Decatur, IL	15,992	99.97	19	1.17-	59.1	0.061
Joliet, IL	28,047	97.18	49	1.78	21.1	0.036
Kankakee, IL	12,020	99.94	27	2.26	40.5	0.084
Lake County, IL	36,099	96.52	75	2.14	14.0	0.028
Peoria, IL	43,549	99.93	68	1.55	41.8	0.067
Rockford, IL	28,351	88.93	60	2.11	34.1	0.070
Springfield, IL	24,799	99.96	64	2.55	30.2	0.079

See notes at end of table.



Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	2,016	2.09	26.2-	0.054-
Ann Arbor, MI	17,760	95.12	45	2.51	22.0	0.055
Battle Creek, MI	16,831	99.89	32	1.90	0.0	0.000
Benton Harbor, MI	21,618	99.88	40	1.87	24.1	0.047
Detroit, MI	448,826	96.43	889	2.04	26.9	0.055-
Flint, MI	43,084	91.01	78	1.84	26.6	0.047
Grand Rapids, MI	64,091	95.42	141	2.16	20.1	0.045
Jackson, MI	17,046	99.82	28	1.66	78.1	0.119
Kalamazoo, MI	21,512	99.85	41	1.91	0.0	0.000
Lansing, MI	32,460	90.23	91	2.78	44.3	0.121
Muskegon, MI	18,957	98.06	31	1.68	0.0	0.000
Saginaw, MI	42,162	96.18	120	2.92	32.6	0.098
Wisconsin	611,044	99.60	1,100	1.76-	39.4	0.069
Appleton, WI	34,483	99.96	58	1.65	50.3	0.083
Eau Claire, WI	16,955	99.94	39	2.23	0.0	0.000
Green Bay, WI	19,185	99.97	36	1.86	110.6	0.206
Janesville, WI	16,529	99.85	36	2.11	119.0	0.232
Kenosha, WI	14,291	99.91	31	2.17	91.7	0.208
LaCrosse, WI	11,858	99.91	22	1.79	0.0	0.000
Madison, WI	30,776	99.74	45	1.42	0.0	0.000
Milwaukee, WI	166,813	99.21	332	1.96	50.5	0.099
Racine, WI	20,503	99.90	28	1.36	35.2	0.047
Sheboygan, WI	14,461	99.98	29	1.96	0.0	0.000
Wausau, WI	12,945	99.95	20	1.53	52.6	0.076
West North Central	2,156,545	93.50	4,713	2.08-	37.1	0.076
Minnesota	397,258	77.30	749	1.77-	46.3	0.082
Duluth, MN-WI	29,977	76.74	40	1.32-	69.8	0.098
Minneapolis, MN-WI	141,769	64.45	288	1.91	23.7	0.045
Rochester, MN	9,393	99.67	21	2.11	41.3	0.098
St. Cloud, MN	12,248	70.92	20	1.51	45.9	0.072
Iowa	404,057	99.37	725	1.71-	34.9	0.059-
Cedar Rapids, IA	19,323	99.94	39	1.97	0.0	0.000
Davenport, IA-IL	44,646	99.94	80	1.78	0.0	0.000
Des Moines, IA	40,067	94.50	78	1.90	25.5	0.048
Dubuque, IA	11,460	99.95	24	2.05	78.2	0.169
Iowa City, IA	6,240	99.90	8	1.23	117.0	0.153
Sioux City, IA-NE	15,951	99.96	38	2.26	125.5	0.290
Waterloo, IA	19,521	99.96	44	2.21	21.1	0.049

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri:	655,875	98.17	1,628	2.41	35.0	0.082
Columbia, MO	8,560	99.98	31	3.54	0.0	0.000
Joplin, MO	19,275	99.95	57	2.94	17.2	0.051
Kansas City, MO-KS	154,919	95.72	362	2.29	47.2	0.106
St. Joseph, MO	13,630	99.97	21	1.48	0.0	0.000
St. Louis, MO-IL	283,167	97.43	746	2.59	32.3	0.082
Springfield, MO	27,676	99.94	57	2.02	18.2	0.035
North Dakota	85,433	98.28	182	2.01	32.4	0.064
Bismarck, ND	8,160	95.13	22	2.62	0.0	0.000
Fargo, ND-MN	14,138	96.57	33	2.19	28.6	0.063
Grand Forks, ND	5,687	99.95	15	2.49	64.4	0.161
South Dakota	96,216	99.59	266	2.60	29.1	0.076
Rapid City, SD	7,152	99.89	27	3.78	68.1	0.280
Sioux Falls, SD	13,275	99.93	24	1.75	41.3	0.071
Nebraska	209,910	98.52	438	1.95	29.1	0.055
Lincoln, NE	20,994	98.50	25	1.14-	0.0	0.000
Omaha, NE-IA	57,609	95.39	164	2.79	48.6	0.134
Kansas	307,796	95.82	725	2.23	43.4	0.095
Lawrence, KS	4,965	87.78	11	2.10	94.4	0.187
Topeka, KS	18,983	97.26	28	1.39	0.0	0.000
Wichita, KS	45,844	88.57	106	2.27	36.8	0.085
South	8,980,101	97.94	21,403	2.40+	38.7	0.092+
South Atlantic	4,668,855	96.31	10,938	2.39+	41.3	0.097
Delaware	70,251	99.94	148	2.19	110.9+	0.239+
Wilmington, DE-NJ-MD	58,114	99.65	119	2.13	93.6	0.199
Maryland	436,606	99.49	835	1.97	51.4	0.102
Baltimore, MD	244,878	99.90	428	1.80-	56.5	0.102
Cumberland, MD-WV	17,051	99.95	36	2.15	29.3	0.060
Hagerstown, MD	14,522	99.95	18	1.26	0.0	0.000
District of Col.	66,196	99.75	123	1.79	54.8	0.099
Washington, DC-MD-VA	261,121	99.05	529	2.07	40.9	0.087

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,147	2.08	50.0	0.104
Charlottesville, VA	12,020	99.92	26	2.15	0.0	0.000
Danville, VA	15,532	99.99	33	2.19	179.7	0.402
Lynchburg, VA	18,110	99.99	24	1.33	42.9	0.055
Norfolk, VA	102,601	99.96	262	2.70	58.1	0.158
Richmond, VA	85,698	99.98	183	2.20	39.0	0.084
Roanoke, VA	30,622	99.98	51	1.63	56.9	0.094
West Virginia	244,259	98.98	473	1.95	43.1	0.081
Charleston, WV	34,215	99.96	54	1.62	79.1	0.121
Huntington, WV-KY-OH	40,891	99.95	92	2.25	23.2	0.048
Parkersburg, WV-OH	19,888	99.94	35	1.74	56.4	0.098
Wheeling, WV-OH	22,016	82.51	50	2.29	41.9	0.091
North Carolina	689,138	99.93	1,355	2.05	56.0+	0.113
Asheville, NC	24,469	99.92	30	1.21-	33.1	0.039
Burlington, NC	14,505	99.99	24	1.74	45.2	0.073
Charlotte, NC	109,337	99.79	264	2.53	38.8	0.097
Fayetteville, NC	13,388	99.98	21	1.72	0.0	0.000
Greensboro, NC	99,387	99.97	177	1.84	23.3	0.042
Hickory, NC	23,392	99.97	53	2.40	80.3	0.186
Jacksonville, NC	5,134	99.86	8	1.74	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	87	1.58	58.7	0.091
Wilmington, NC	12,634	99.97	29	2.46	72.6	0.175
South Carolina	329,020	99.44	906	2.92+	32.0	0.092
Anderson, SC	16,583	99.70	32	2.03	0.0	0.000
Charleston, SC	34,246	96.90	95	2.97	21.0	0.064
Columbia, SC	35,361	99.98	95	2.86	53.7	0.154
Florence, SC	11,195	99.96	58	5.59+	36.1	0.198
Greenville, SC	65,893	98.01	137	2.19	7.4-	0.016-
Georgia	561,716	99.71	1,298	2.39	40.5	0.094
Albany, GA	9,292	99.92	23	2.61	43.6	0.116
Athens, GA	13,510	99.96	17	1.28	0.0	0.000
Atlanta, GA	189,539	99.27	401	2.19	53.7	0.116
Augusta, GA-SC	32,938	99.93	130	4.17+	64.2	0.262
Columbus, GA-AL	22,847	99.96	35	1.62	29.0	0.047
Macon, GA	25,929	99.97	80	3.25	40.1	0.125
Savannah, GA	25,338	99.94	49	2.02	63.0	0.126

See notes at end of table.



Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Florida	1,705,534	90.97	4,653	2.72+	32.4	0.087
Bradenton, FL	42,906	99.68	123	2.77	16.4	0.044
Daytona Beach, FL	62,616	92.90	134	2.13	22.9	0.046
Fort Lauderdale, FL	181,839	81.09	648	3.40+	38.1	0.129
Fort Myers, FL	61,428	99.65	125	2.14	17.3	0.034
Fort Pierce, FL	41,198	99.28	127	3.27	64.4	0.211
FT. Walton Beach, FL	10,169	99.88	30	3.28	35.8	0.114
Gainesville, FL	16,758	99.58	31	1.88	0.0	0.000
Jacksonville, FL	80,895	98.22	218	2.78	28.3	0.077
Lakeland, FL	55,495	99.56	77	1.42-	13.6	0.019-
Melbourne, FL	46,501	99.72	85	1.97	46.0	0.096
Miami-Hialeah, FL	168,502	79.57	713	3.89+	29.0	0.115
Naples, FL	23,433	99.75	46	2.08	70.0	0.140
Ocala, FL	31,367	99.50	104	3.61+	9.8-	0.035
Orlando, FL	90,604	98.55	225	2.56	35.9	0.091
Panama City, FL	11,817	99.70	33	2.99	0.0	0.000
Pensacola, FL	29,972	99.89	87	3.07	24.8	0.071
Sarasota, FL	77,895	99.81	158	2.00	31.5	0.063
Tallahassee, FL	17,414	97.85	35	2.04	57.8	0.116
Tampa, FL	323,951	87.05	800	2.41	32.3	0.077
West Palm Beach, FL	139,729	85.22	407	2.88+	27.1	0.077
East South Central	1,726,272	99.80	3,983	2.30	35.2	0.079
Kentucky	422,657	99.70	980	2.31	34.1	0.077
Lexington, KY	31,008	98.87	81	2.61	35.5	0.096
Louisville, KY-IN	107,485	99.20	287	2.69	28.9	0.075
Owensboro, KY	10,319	99.96	11	1.08	0.0	0.000
Tennessee	550,327	99.65	1,261	2.30	34.4	0.079
Chattanooga, TN-GA	50,061	99.97	100	2.03	30.6	0.060
Clarksville, TN-KY	12,541	99.91	29	2.29	63.8	0.156
Jackson, TN	10,064	99.95	46	4.40	21.7	0.094
Johnson City, TN-VA	55,068	99.97	90	1.68	34.5	0.056
Knoxville, TN	70,970	99.96	126	1.82	54.3	0.102
Memphis, TN-AR-MS	88,836	98.06	241	2.71	47.2	0.123
Nashville, TN	92,994	99.96	227	2.45	34.7	0.086

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	1,000	2.18	31.7	0.067
Anniston, AL	13,124	99.97	34	2.71	62.4	0.163
Birmingham, AL	108,546	99.98	260	2.40	39.2	0.092
Dothan, AL	12,690	99.94	34	2.73	0.0	0.000
Florence, AL	16,687	99.97	31	1.90	62.9	0.123
Gadsden, AL	14,295	99.97	36	2.66	0.0	0.000
Huntsville, AL	17,137	99.96	22	1.35	0.0	0.000
Mobile, AL	50,513	99.96	110	2.25	57.5	0.124
Montgomery, AL	29,832	99.97	47	1.59	21.8	0.033
Tuscaloosa, AL	13,604	99.99	36	2.64	55.3	0.146
Mississippi	290,157	99.98	742	2.49	42.8	0.102
Biloxi-Gulfport, MS	18,079	99.97	40	2.31	0.0	0.000
Jackson, MS	35,305	99.98	78	2.17	13.6	0.027
Pascagoula, MS	8,556	99.88	28	3.53	37.4	0.129
West South Central	2,584,974	99.74	6,482	2.49+	36.6	0.089
Arkansas	321,739	99.96	822	2.52	43.8	0.109
Fayetteville, AR	11,803	99.95	36	3.01	82.4	0.249
Fort Smith, AR-OK	21,413	99.98	53	2.48	56.7	0.141
Little Rock, AR	50,966	99.99	133	2.62	37.8	0.099
Pine Bluff, AR	11,012	99.98	8	0.70-	0.0	0.000
Louisiana	415,968	99.98	1,156	2.76+	42.2	0.113
Alexandria, LA	13,819	99.96	54	3.84	19.4	0.070
Baton Rouge, LA	39,583	99.97	94	2.44	0.0	0.000
Houma-Thibodaux, LA	13,501	100.00	39	3.07	79.6	0.242
Lafayette, LA	14,620	99.99	53	3.69	0.0	0.000
Lake Charles, LA	16,436	99.98	21	1.33	49.1	0.064
Monroe, LA	14,648	99.99	34	2.26	33.6	0.065
New Orleans, LA	118,708	99.98	343	2.92+	40.8	0.119
Shreveport, LA	36,822	99.98	106	2.80	86.2	0.233
Oklahoma	378,716	99.02	1,167	3.00+	34.4	0.101
Enid, OK	8,215	99.94	32	3.71	59.6	0.227
Lawton, OK	8,221	99.99	19	2.41	51.3	0.128
Oklahoma City, OK	88,646	97.45	304	3.37+	30.2	0.099
Tulsa, OK	71,032	98.13	219	3.08+	26.7	0.084

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Texas	1,468,551	99.81	3,337	2.27	33.7	0.075
Abilene, TX	13,100	99.96	36	2.69	28.2	0.073
Amarillo, TX	19,063	99.97	34	1.82	0.0	0.000
Austin, TX	47,578	99.95	85	1.78	83.4	0.147
Beaumont, TX	42,323	99.98	137	3.27	29.1	0.096
Brazoria, TX	12,486	99.78	38	3.25	0.0	0.000
Brownsville, TX	20,169	99.86	38	1.89	27.9	0.049
Bryan, TX	6,955	99.96	12	1.70	0.0	0.000
Corpus Christi, TX	28,417	95.56	63	2.27	48.6	0.109
Dallas, TX	172,118	99.95	424	2.50	26.3	0.065
El Paso, TX	37,292	99.94	43	1.19-	0.0	0.000
Fort Worth, TX	97,947	99.96	193	2.01	21.5	0.041
Galveston, TX	19,376	99.94	70	3.75	30.2	0.109
Houston, TX	187,992	99.85	457	2.51	24.6	0.061
Killeen-Temple, TX	17,182	99.97	29	1.68	32.8	0.058
Laredo, TX	8,421	99.99	10	1.15	0.0	0.000
Longview, TX	20,547	99.98	54	2.58	56.1	0.142
Lubbock, TX	18,957	99.97	47	2.51	21.8	0.053
McAllen, TX	27,402	99.82	52	1.92	56.4	0.111
Midland, TX	7,362	99.96	15	2.13	0.0	0.000
Odessa, TX	9,207	99.99	34	3.96	30.3	0.120
San Angelo, TX	11,213	99.99	28	2.46	72.7	0.175
San Antonio, TX	107,989	99.28	202	1.89	54.5	0.102
Sherman-Denison, TX	14,532	99.99	53	3.58	56.3	0.201
Texas-Kana, TX-AR	15,315	99.99	40	2.55	54.1	0.125
Tyler, TX	18,223	99.98	31	1.72	34.5	0.055
Victoria, TX	6,871	99.97	13	1.94	0.0	0.000
Waco, TX	23,624	99.99	46	1.91	42.0	0.082
Wichita Falls, TX	14,462	99.97	38	2.57	134.5	0.336
West	4,539,951	93.08	9,744	2.16	32.4-	0.070
Mountain	1,200,638	94.36	2,122	1.80-	32.4	0.058-
Montana	97,248	99.90	181	1.86	49.0	0.092
Billings, MT	12,097	99.88	35	2.95	28.3	0.085
Great Falls, MT	9,076	99.91	9	1.00	0.0	0.000
Idaho	109,822	99.77	194	1.78	10.5-	0.018-
Boise City, ID	18,471	99.90	38	2.10	27.4	0.055
Wyoming	42,408	99.91	76	1.79	26.3	0.047
Casper, WY	5,379	99.91	8	1.54	0.0	0.000
Cheyenne, WY	6,886	99.96	8	1.18	122.9	0.148

See notes at end of table.



Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	434	1.62-	29.4	0.048-
Boulder-Longmont, CO	15,143	97.96	25	1.61	38.1	0.064
Colorado Springs, CO	24,899	95.03	36	1.50	27.3	0.042
Denver, CO	119,624	94.10	180	1.51-	33.0	0.050
Fort Collins, CO	15,089	99.71	26	1.71	35.7	0.065
Greeley, CO	11,610	99.62	15	1.27	69.9	0.084
Pueblo, CO	15,372	94.43	26	1.69	0.0	0.000
New Mexico	125,371	92.49	197	1.58-	21.0	0.031-
Albuquerque, NM	33,783	81.01	44	1.34-	0.0	0.000
Las Cruces, NM	9,375	99.94	18	1.98	0.0	0.000
Santa Fe, NM	8,454	93.66	8	0.96	0.0	0.000
Arizona	348,748	91.33	603	1.80-	35.6	0.064
Phoenix, AZ	187,381	86.74	358	1.97	37.2	0.072
Tucson, AZ	70,550	96.06	110	1.59-	36.7	0.058
Utah	128,579	99.92	262	2.06	46.6	0.094
Provo-Orem, UT	16,076	99.93	49	3.10	85.8	0.254
Salt Lake City, UT	77,243	99.94	138	1.82	36.8	0.065
Nevada	81,799	86.15	175	2.36	29.6	0.070
Las Vegas, NV	45,252	82.98	99	2.46	10.5-	0.026-
Reno, NV	19,133	89.17	38	2.15	28.7	0.056
Pacific	3,339,313	92.62	7,622	2.29	32.4	0.074
Washington	461,706	92.41	899	1.95-	30.9	0.060
Bellingham, WA	13,629	99.51	23	1.65	44.3	0.070
Bremerton, WA	15,439	96.59	27	1.77	74.1	0.130
Olympia, WA	14,254	90.98	37	2.59	27.4	0.070
Richland, WA	12,559	99.85	24	2.03	46.1	0.087
Seattle, WA	159,828	86.57	307	1.92	19.2	0.037-
Spokane, WA	41,237	94.51	78	1.86	36.7	0.070
Tacoma, WA	50,245	97.24	103	2.07	29.2	0.060
Vancouver, WA	17,048	80.32	22	1.31	0.0	0.000
Yakima, WA	22,738	99.74	50	2.17	61.8	0.128
Oregon	303,778	86.84	484	1.58-	30.8	0.049-
Eugene, OR	28,947	88.67	41	1.43	0.0	0.000
Medford, OR	20,326	99.78	29	1.44	0.0	0.000
Portland, OR	99,155	72.79	146	1.42-	34.0	0.048
Salem, OR	33,249	90.39	64	1.85	15.1	0.028

See notes at end of table.

Table 3. Permanent cardiac pacemaker implantation: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	6,099	2.47+	32.5	0.081
Anaheim-Santa Ana, CA	167,171	89.39	414	2.46	26.2	0.064
Bakersfield, CA	44,969	99.76	182	4.19+	16.8	0.069
Chico, CA	27,102	99.09	59	2.21	34.6	0.075
Fresno, CA	58,425	99.90	158	2.68	36.5	0.100
Los Angeles, CA	677,939	91.40	1,890	2.77+	30.5	0.086
Merced, CA	13,462	99.86	58	4.45	34.8	0.155
Modesto, CA	33,619	98.80	86	2.59	44.9	0.120
Oakland, CA	188,258	99.08	364	1.94	26.7	0.053
Oxnard-Ventura, CA	49,488	93.74	118	2.42	68.8	0.164
Redding, CA	17,796	99.73	48	2.85	64.8	0.182
Riverside, CA	203,246	90.92	514	2.56	33.3	0.084
Sacramento, CA	120,273	91.81	248	2.13	24.1	0.051
Salinas, CA	29,131	99.86	62	2.13	0.0	0.000
San Diego, CA	205,402	91.35	461	2.27	50.9	0.117
San Francisco, CA	163,753	89.02	322	1.90	53.4	0.104
San Jose, CA	105,258	99.50	223	2.14	45.2	0.096
Santa Barbara, CA	38,021	99.70	106	2.71	28.6	0.075
Santa Cruz, CA	24,640	99.77	33	1.27-	0.0	0.000
Santa Rosa, CA	44,775	99.49	118	2.59	33.8	0.087
Stockton, CA	40,855	91.54	113	2.73	26.0	0.071
Vallejo, CA	35,778	98.59	104	2.92	37.4	0.111
Visalia, CA	28,811	99.91	73	2.52	13.7	0.034
Yuba City, CA	11,835	99.35	32	2.79	0.0	0.000
Alaska	16,348	99.78	31	2.09	35.7	0.069
Anchorage, AK	5,625	99.75	9	1.88	0.0	0.000
Hawaii	80,233	83.64	109	1.39-	46.1	0.064
Honolulu, HI	57,680	83.31	75	1.36-	52.9	0.073

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.





# Carotid endarterectomy

Carotid endarterectomy is a procedure that has recently received considerable attention because of concern over the appropriateness of certain indications for its use. In 1986, there were 48,925 operations for carotid endarterectomy among the aged Medicare population, a rate of 1.83 discharges per 1,000 enrollees. The 30-day post-admission death rate was 21.2 deaths per 1,000 discharges, or approximately 2 percent of all carotid endarterectomies (Table 1).

## Age and sex patterns

The rate of discharges for carotid endarterectomy operations per 1,000 enrollees was 85 percent greater for men than for women (2.53 for men versus 1.37 for women). The relative difference in the rate of operations between men and women became more marked as age increased. For men, the number of discharges per 1,000 enrollees was highest for the age group 75–84 years; whereas for women, it was highest in the age group 65–74 years. For both sexes, the number of discharges per 1,000 enrollees was lowest for the group 85 years of age or over. This lower rate of use of carotid endarterectomy in the oldest age group reflects the pattern often seen for elective operations.

The 30-day post-admission death rate per 1,000 discharges was relatively similar for

men and women (22.5 deaths for men versus 19.5 for women). Mortality increased with age, reaching about 40 deaths per 1,000 discharges for both men and women 85 years of age or over.

The 30-day post-admission death rate per 1,000 enrollees was higher for men than for women across all age groups (Table 1). This higher rate for men primarily reflects the higher rate of these surgeries for men.

## Patterns by race

In 1986, for all ages combined, the rate of carotid endarterectomy for white persons was 3.6 times the rate for black persons. This differential generally held true across all age groups. In 1986, there were a total of 1,083 such operations performed in the United States for black persons compared with 46,128 for white persons. The 30-day post-admission death rate for black persons should be interpreted with caution because they are based on so few operations.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

Geographically, there was almost a fivefold difference in the rates of carotid endarterectomy operations across the States. The States with the highest discharge rates per 1,000 enrollees were scattered throughout the country, with the largest number of such States located in the South (Figure 1). The States with the lowest discharge rates per 1,000 enrollees were also scattered throughout the country, but the majority were located in the Northeast. Discharge rates by State ranged from a high of 2.92 in Louisiana to a low of 0.59 discharges per 1,000 enrollees in Hawaii (Table 2).

The variation in discharge rates by MSAs and rural areas across and within U.S. census divisions is shown in Figure 2. The highest median discharge rate per 1,000 enrollees was in the West South Central Division and the lowest median discharge rate per 1,000 enrollees was in the New England Division. The correlation coefficient computed between discharges per 1,000 enrollees and 30-day post-admission deaths per 1,000 discharges was not significant at the .01 level.

## Urban-rural patterns

In the United States as a whole, the discharge rate and the 30-day post-admission death rate for carotid endarterectomy were slightly higher for rural areas than for all MSAs combined. By census region, this pattern only held true for the Northeast. In the North Central and West Regions, the 30-day post-admission death rates per 1,000 discharges were higher for rural areas than for all MSAs combined; and the discharge rates for rural areas were lower. In the South, the rural discharge rate was identical to the rate for all MSAs combined, but the 30-day post-admission death rate per 1,000 discharges was slightly lower.

Table 1. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	48,925	1.83	21.2	0.038
65-74 years	16,162,594	96.33	32,052	1.98	18.3	0.036
75-84 years	8,020,447	96.96	15,613	1.95	25.4	0.049
85 years or over	2,515,883	98.32	1,260	0.50	40.5	0.020
Men	10,650,991	96.01	26,925	2.53	22.5	0.056
65-74 years	7,056,445	95.90	18,347	2.60	18.7	0.048
75-84 years	2,912,366	96.02	8,028	2.76	30.0	0.082
85 years or over	682,180	97.22	550	0.81	40.0	0.032
Women	16,047,933	97.16	22,000	1.37	19.5	0.026
65-74 years	9,106,149	96.66	13,705	1.51	17.7	0.026
75-84 years	5,108,081	97.51	7,585	1.48	20.6	0.030
85 years or over	1,833,703	98.74	710	0.39	40.8	0.015
White	23,574,066	96.62	46,128	1.96	21.1	0.041
65-74 years	14,207,064	96.23	30,111	2.12	18.2	0.038
75-84 years	7,134,499	96.88	14,801	2.07	25.4	0.052
85 years or over	2,232,503	98.26	1,216	0.54	40.3	0.021
Men	9,391,016	95.94	25,469	2.71	22.4	0.060
65-74 years	6,216,472	95.83	17,313	2.79	18.6	0.051
75-84 years	2,573,989	95.94	7,625	2.96	29.8	0.088
85 years or over	600,555	97.12	531	0.88	39.5	0.034
Women	14,183,050	97.07	20,659	1.46	19.5	0.028
65-74 years	7,990,592	96.55	12,798	1.60	17.7	0.028
75-84 years	4,560,510	97.42	7,176	1.57	20.8	0.032
85 years or over	1,631,948	98.69	685	0.42	40.9	0.017
Black	1,991,943	97.86	1,083	0.54	22.2	0.012
65-74 years	1,213,014	97.54	740	0.61	20.3	0.012
75-84 years	583,429	98.11	314	0.54	28.7	0.015
85 years or over	195,500	99.11	29	0.15	0.0	0.000
Men	792,788	97.49	497	0.63	28.2	0.017
65-74 years	519,305	97.28	353	0.68	22.7	0.015
75-84 years	215,401	97.67	132	0.61	45.5	0.027
85 years or over	58,082	98.74	12	0.21	0.0	0.000
Women	1,199,155	98.10	586	0.49	17.1	0.008
65-74 years	693,709	97.74	387	0.56	18.1	0.010
75-84 years	368,028	98.37	182	0.49	16.5	0.008
85 years or over	137,418	99.26	17	0.12	0.0	0.000

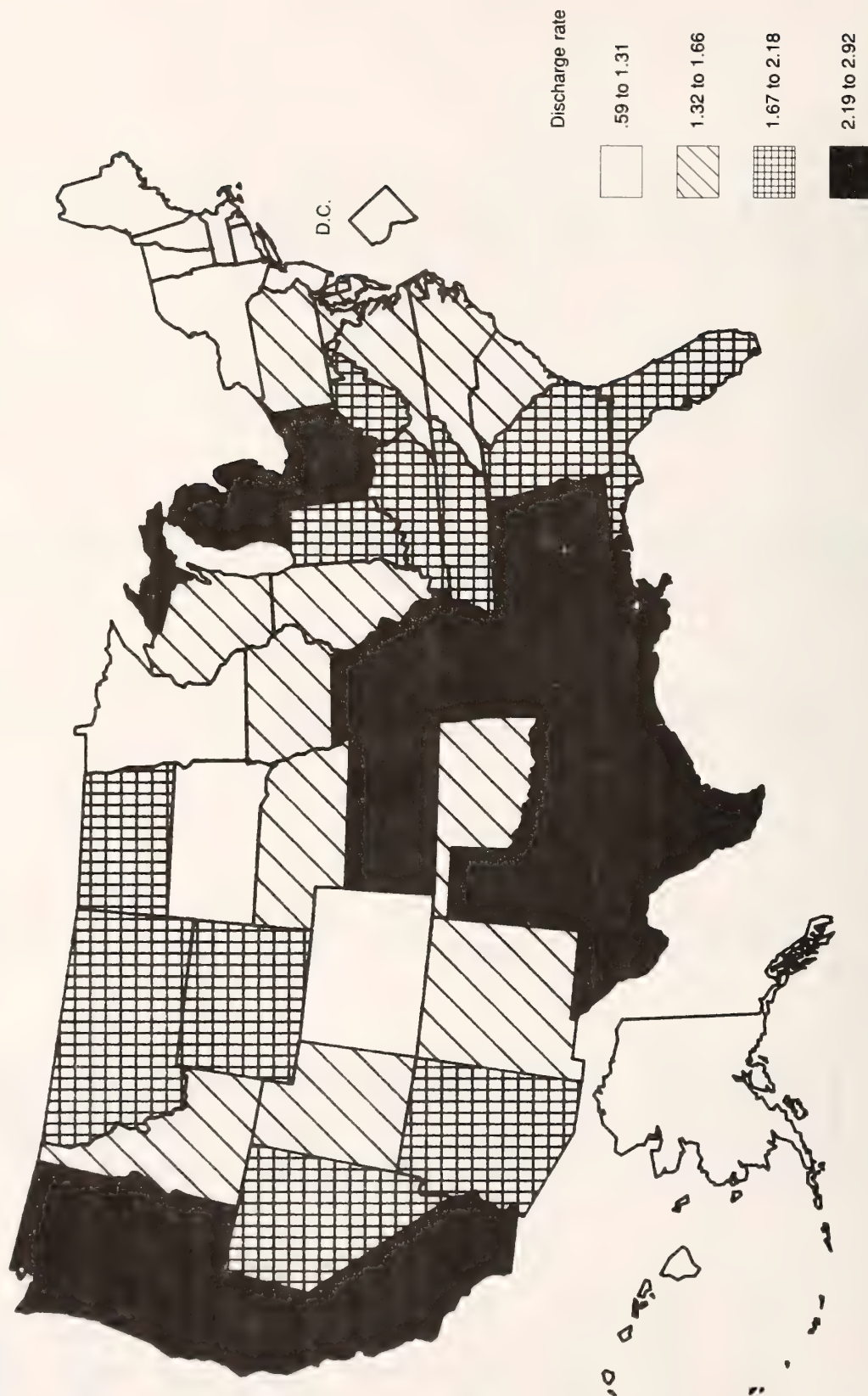
(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

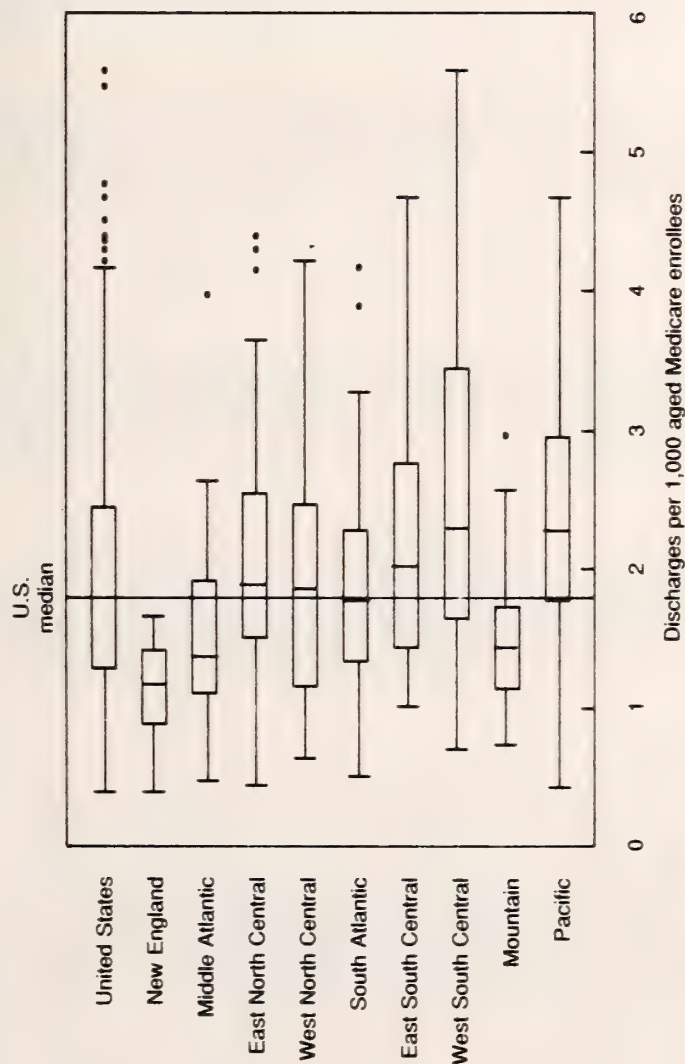


Figure 1. Carotid endarterectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Carotid endarterectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Joplin, MO	4.21
	Steubenville, OH-WV	4.30
	Clarksville, TN-KY	4.30
	Biloxi-Gulfport, MS	4.38
	Midland, TX	4.40
	Toledo, OH	4.40
	Odessa, TX	4.52
	Redding, CA	4.67
	Owensboro, KY	4.67
	Alexandria, LA	4.76
Middle Atlantic	Sherman-Denison, TX	5.46
	Houma-Thibodaux, LA	5.59
	Sharon, PA	3.95
East North Central	Flint, MI	4.14
	Steubenville, OH-WV	4.30
	Toledo, OH	4.40
South Atlantic	Wheeling, WV-OH	3.89
	Panama City, FL	4.16
Mountain	Casper, WY	2.96

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	48,925	1.83	21.2	0.038
Metropolitan	19,363,284	95.80	35,003	1.81	20.9	0.037
Rural	7,335,640	99.16	13,922	1.88	21.7	0.040
Northeast	6,276,897	98.04	7,436	1.19-	19.4	0.022-
Metropolitan	5,564,648	97.84	6,483	1.18-	18.3	0.020-
Rural	712,249	99.69	953	1.33-	26.8	0.034
New England	1,569,313	96.20	1,810	1.17-	16.8	0.019-
Metropolitan	1,342,886	95.66	1,564	1.19-	16.2	0.018-
Rural	226,427	99.53	246	1.08-	20.7	0.022
Maine	153,209	99.88	188	1.23-	10.9	0.013-
Metropolitan	82,345	99.89	99	1.22-	0.0	0.000
Rural	70,864	99.87	89	1.25-	22.9	0.027
New Hampshire	114,752	98.98	141	1.23-	21.3	0.026
Metropolitan	74,135	98.55	107	1.46	27.8	0.040
Rural	40,617	99.77	34	0.83-	0.0	0.000
Vermont	62,781	99.82	65	1.04-	0.0	0.000
Metropolitan	10,422	99.91	4	0.39-	0.0	0.000
Rural	52,359	99.80	61	1.17-	0.0	0.000
Massachusetts	709,478	93.75	894	1.30-	17.0	0.021-
Metropolitan	659,025	93.40	849	1.33-	15.5	0.019-
Rural	50,453	98.58	45	0.88-	45.9	0.038
Rhode Island	132,332	97.59	140	1.07-	14.7	0.015
Metropolitan	132,332	97.59	140	1.07-	14.7	0.015
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	382	0.97-	21.2	0.020
Metropolitan	384,627	97.50	365	0.95-	19.5	0.018-
Rural	12,134	99.66	17	1.42	55.5	0.082
Middle Atlantic	4,707,584	98.68	5,626	1.20-	20.2	0.023-
Metropolitan	4,221,762	98.55	4,919	1.17-	19.0	0.021-
Rural	485,822	99.76	707	1.45-	28.9	0.040
New York	2,143,249	98.98	2,069	0.98-	22.1	0.020-
Metropolitan	1,922,371	98.89	1,789	0.95-	20.4	0.018-
Rural	220,878	99.75	280	1.27-	33.3	0.039

See notes at end of table.



Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	1,167	1.27-	14.0	0.017-
Metropolitan	916,155	97.84	1,167	1.27-	14.0	0.017-
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	2,390	1.45-	21.6	0.030
Metropolitan	1,383,236	98.56	1,963	1.42-	20.6	0.028
Rural	264,944	99.78	427	1.59	26.1	0.040
North Central	6,901,975	96.39	13,646	1.99+	19.6	0.038
Metropolitan	4,398,761	95.22	9,077	2.08+	19.3	0.039
Rural	2,503,214	98.51	4,569	1.83	20.3	0.036
East North Central	4,745,430	97.76	9,758	2.06+	18.6	0.037
Metropolitan	3,453,558	97.13	7,237	2.11+	18.7	0.038
Rural	1,291,872	99.47	2,521	1.94	18.4	0.034
Ohio	1,263,869	99.46	3,363	2.66+	19.2	0.050
Metropolitan	987,528	99.60	2,648	2.69+	19.8	0.052
Rural	276,341	98.95	715	2.58+	17.0	0.042
Indiana	623,062	97.86	1,093	1.76	22.0	0.038
Metropolitan	399,457	97.01	732	1.84	20.7	0.037
Rural	223,605	99.41	361	1.61	24.6	0.039
Illinois	1,265,011	95.90	2,083	1.66-	16.9	0.027
Metropolitan	952,934	94.73	1,510	1.60-	18.0	0.028
Rural	312,077	99.68	573	1.85	13.9	0.025
Michigan	982,444	96.86	2,261	2.29+	16.0	0.036
Metropolitan	744,347	96.06	1,705	2.29+	16.5	0.037
Rural	238,097	99.44	556	2.28+	14.6	0.032
Wisconsin	611,044	99.60	958	1.57-	22.6	0.033
Metropolitan	369,292	99.43	642	1.75	19.1	0.032
Rural	241,752	99.86	316	1.29-	29.8	0.036
West North Central	2,156,545	93.50	3,888	1.83	22.2	0.040
Metropolitan	945,203	88.82	1,840	2.00	21.6	0.042
Rural	1,211,342	97.51	2,048	1.70	22.7	0.037
Minnesota	397,258	77.30	442	1.15-	20.7	0.022
Metropolitan	187,915	67.07	237	1.34-	30.0	0.038
Rural	209,343	89.55	205	0.99-	9.9	0.009-

See notes at end of table.

Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa						
Metropolitan	404,057	99.37	617	1.55-	14.5	0.022
Rural	136,818	98.24	231	1.72	12.8	0.021
	267,239	99.96	386	1.47-	15.5	0.022
Missouri						
Metropolitan	655,875	98.17	1,481	2.28+	25.4	0.056
Rural	383,255	96.99	865	2.30+	22.8	0.052
	272,620	99.88	616	2.25+	28.9	0.064
North Dakota						
Metropolitan	85,433	98.28	162	1.88	25.0	0.045
Rural	22,964	98.14	51	2.25	19.6	0.042
	62,469	98.34	111	1.75	27.6	0.046
South Dakota						
Metropolitan	96,216	99.59	114	1.19-	43.9	0.050
Rural	20,427	99.92	29	1.43	69.5	0.096
	75,789	99.51	85	1.13-	35.3	0.038
Nebraska						
Metropolitan	209,910	98.52	324	1.57	18.1	0.028
Rural	70,076	95.86	122	1.79	16.1	0.028
	139,834	99.91	202	1.46	19.3	0.027
Kansas						
Metropolitan	307,796	95.82	748	2.48+	20.9	0.050
Rural	123,748	93.24	305	2.51+	16.5	0.040
	184,048	97.63	443	2.45+	23.8	0.058
South						
Metropolitan	8,980,101	97.94	18,307	2.03+	21.9	0.043
Rural	5,757,016	96.87	11,702	2.03+	22.4	0.044
	3,223,085	99.91	6,605	2.03+	21.1	0.042
South Atlantic						
Metropolitan	4,668,855	96.31	8,542	1.81	20.6	0.036
Rural	3,313,125	94.94	6,104	1.83	22.0	0.039
	1,355,730	99.84	2,438	1.77	16.9	0.029
Delaware						
Metropolitan	70,251	99.94	118	1.67	26.9	0.042
Rural	44,355	99.95	49	1.10-	45.2	0.045
	25,896	99.94	69	2.62	14.9	0.038
Maryland						
Metropolitan	436,606	99.49	674	1.54-	19.5	0.029
Rural	395,091	99.44	579	1.46-	22.7	0.032
	41,515	99.95	95	2.26	0.0	0.000
District of Col.						
Metropolitan	66,196	99.75	44	0.69-	0.0	0.000
Rural	66,196	99.75	44	0.69-	0.0	0.000
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.

Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees			
Virginia	566,135	99.91	844	1.49-	19.1	0.028			
Metropolitan	355,193	99.87	565	1.60	19.5	0.030			
Rural	210,942	99.97	279	1.31-	18.3	0.023			
West Virginia	244,259	98.98	481	1.96	16.3	0.031			
Metropolitan	90,704	97.39	205	2.26	19.5	0.044			
Rural	153,555	99.95	276	1.79	14.1	0.025			
North Carolina	689,138	99.93	968	1.40-	24.2	0.033			
Metropolitan	346,905	99.89	505	1.46-	30.4	0.043			
Rural	342,233	99.96	463	1.34-	17.5	0.023			
South Carolina	329,020	99.44	479	1.44-	26.0	0.036			
Metropolitan	186,873	99.05	252	1.34-	32.7	0.042			
Rural	142,147	99.95	227	1.58	18.4	0.028			
Georgia	561,716	99.71	1,222	2.18+	22.2	0.048			
Metropolitan	313,319	99.54	653	2.10	24.7	0.051			
Rural	248,397	99.93	569	2.28+	19.4	0.043			
Florida	1,705,534	90.97	3,712	2.14+	19.6	0.042			
Metropolitan	1,514,489	90.04	3,252	2.12+	19.9	0.042			
Rural	191,045	99.17	460	2.29+	17.4	0.039			
East South Central	1,726,272	99.80	3,695	2.14+	19.0	0.039			
Metropolitan	873,594	99.64	1,949	2.24+	17.5	0.038			
Rural	852,678	99.97	1,746	2.04+	20.6	0.041			
Kentucky	422,657	99.70	814	1.92	19.8	0.036			
Metropolitan	183,264	99.37	382	2.11	16.0	0.032			
Rural	239,393	99.96	432	1.79	23.1	0.040			
Tennessee	550,327	99.65	1,138	2.06	18.4	0.037			
Metropolitan	342,007	99.46	704	2.06	12.7	0.026			
Rural	208,320	99.96	434	2.06	27.8	0.056			
Alabama	463,131	99.97	1,083	2.33+	21.3	0.048			
Metropolitan	281,960	99.97	666	2.36+	19.6	0.045			
Rural	181,171	99.97	417	2.29+	24.0	0.054			
Mississippi	290,157	99.98	660	2.28+	15.2	0.033			
Metropolitan	66,363	99.96	197	2.95+	31.1	0.089			
Rural	223,794	99.98	463	2.08	8.6-	0.017			

See notes at end of table.



Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
West South Central						
Metropolitan	2,584,974	99.74	6,070	2.34+	25.5	0.060+
Rural	1,570,297	99.59	3,649	2.32+	25.6	0.059+
	1,014,677	99.97	2,421	2.36+	25.4	0.060+
Arkansas						
Metropolitan	321,739	99.96	888	2.73+	21.1	0.057
Rural	100,956	99.98	224	2.22	13.7	0.029
	220,773	99.95	664	2.95+	23.4	0.070
Louisiana						
Metropolitan	415,968	99.98	1,212	2.92+	25.4	0.073+
Rural	268,137	99.98	794	2.97+	23.6	0.070
	147,831	99.99	418	2.84+	29.0	0.080
Oklahoma						
Metropolitan	378,716	99.02	598	1.58	30.8	0.049
Rural	180,038	98.00	309	1.73	28.2	0.049
	198,678	99.96	289	1.45-	33.7	0.049
Texas						
Metropolitan	1,468,551	99.81	3,372	2.28+	25.7	0.059+
Rural	1,021,156	99.73	2,322	2.26+	26.9	0.061+
	447,395	99.97	1,050	2.32+	23.1	0.053
West						
Metropolitan	4,539,951	93.08	9,536	2.07+	23.2	0.048+
Rural	3,642,859	91.96	7,741	2.11+	22.7	0.047
	897,092	97.88	1,795	1.92	25.1	0.048
Mountain						
Metropolitan	1,200,638	94.36	1,891	1.54-	28.3	0.043
Rural	720,893	92.10	1,101	1.50-	28.6	0.042
	479,745	97.98	790	1.59-	27.8	0.043
Montana						
Metropolitan	97,248	99.90	169	1.70	29.7	0.050
Rural	21,173	99.90	39	1.81	0.0	0.000
	76,075	99.91	130	1.67	38.8	0.063
Idaho						
Metropolitan	109,822	99.77	160	1.41	18.8	0.026
Rural	18,471	99.90	20	1.07	0.0	0.000
	91,351	99.74	140	1.48	21.5	0.031
Wyoming						
Metropolitan	42,408	99.91	92	2.13	41.3	0.092
Rural	12,265	99.93	21	1.70	0.0	0.000
	30,143	99.89	71	2.31	53.7	0.129
Colorado						
Metropolitan	266,663	94.73	307	1.15-	10.0	0.011-
Rural	201,737	95.23	241	1.20-	8.4	0.009-
	64,926	93.22	66	1.00-	16.0	0.015

See notes at end of table.

Table 2. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	211	1.64	27.4	0.046
Metropolitan	51,612	85.86	68	1.30	45.6	0.057
Rural	73,759	97.76	143	1.88	19.6	0.039
Arizona	348,748	91.33	609	1.69	33.4	0.055
Metropolitan	257,931	89.11	438	1.66	36.9	0.061
Rural	90,817	98.31	171	1.76	24.4	0.042
Utah	128,579	99.92	177	1.34-	57.8	0.075
Metropolitan	93,319	99.94	130	1.37-	62.8	0.083
Rural	35,260	99.88	47	1.28	43.8	0.054
Nevada	81,799	86.15	166	1.92	12.4	0.023
Metropolitan	64,385	84.73	144	2.12	14.5	0.030
Rural	17,414	91.83	22	1.18	0.0	0.000
Pacific	3,339,313	92.62	7,645	2.27+	22.0	0.049+
Metropolitan	2,921,966	91.93	6,640	2.27+	21.8	0.049+
Rural	417,347	97.77	1,005	2.31+	23.1	0.053
Washington	461,706	92.41	1,242	2.66+	22.7	0.059
Metropolitan	346,977	90.86	914	2.63+	23.1	0.059
Rural	114,729	97.42	328	2.77+	21.4	0.059
Oregon	303,778	86.84	777	2.53+	34.2	0.087+
Metropolitan	181,677	80.38	478	2.66+	34.7	0.092
Rural	122,101	98.65	299	2.35	33.3	0.078
California	2,477,248	93.71	5,552	2.23+	19.8	0.044
Metropolitan	2,330,007	93.36	5,199	2.23+	20.2	0.044
Rural	147,241	99.57	353	2.29	14.3	0.032
Alaska	16,348	99.78	23	1.31	52.0	0.059
Metropolitan	5,625	99.75	8	1.34	150.0	0.175
Rural	10,723	99.80	15	1.30	0.0	0.000
Hawaii	80,233	83.64	51	0.59-	41.7	0.023
Metropolitan	57,680	83.31	41	0.67-	26.3	0.016
Rural	22,553	84.47	10	0.41-	101.3	0.041

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	48,925	1.83	21.2	0.038
Northeast	6,276,897	98.04	7,436	1.19-	19.4	0.022-
New England	1,569,313	96.20	1,810	1.17-	16.8	0.019-
Maine	153,209	99.88	188	1.23-	10.9	0.013
Bangor, ME	16,035	99.87	24	1.50	0.0	0.000
Lewiston-Auburn, ME	13,464	99.93	10	0.76-	0.0	0.000
Portland, ME	52,846	99.89	65	1.24	0.0	0.000
New Hampshire	114,752	98.98	141	1.23-	21.3	0.026
Manchester, NH	44,397	97.91	70	1.60	14.1	0.022
Portsmouth, NH	29,738	99.52	37	1.24	54.0	0.066
Vermont	62,781	99.82	65	1.04-	0.0	0.000
Burlington, VT	10,422	99.91	4	0.39-	0.0	0.000
Massachusetts	709,478	93.75	894	1.30-	17.0	0.021
Boston, MA	429,794	95.67	540	1.30-	13.1	0.016-
New Bedford, MA	65,540	98.67	101	1.56	31.6	0.045
Pittsfield, MA	20,281	91.00	33	1.67	59.8	0.098
Springfield, MA	72,225	92.57	76	1.08-	12.9	0.013
Worcester, MA	71,185	79.42	99	1.45	0.0	0.000
Rhode Island	132,332	97.59	140	1.07-	14.7	0.015
Providence, RI	132,332	97.59	140	1.07-	14.7	0.015
Connecticut	396,761	97.56	382	0.97-	21.2	0.020
Bridgeport, CT	96,911	96.63	79	0.82-	13.2	0.010
Hartford, CT	157,139	99.16	168	1.07-	18.5	0.019
New Haven, CT	102,964	95.31	106	1.04-	26.9	0.029
New London, CT	27,613	99.70	12	0.43-	0.0	0.000

See notes at end of table.



Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As Percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	5,626	1.20-	20.2	0.023-
New York	2,143,249	98.98	2,069	0.98-	22.1	0.020-
Albany, NY	115,122	98.78	55	0.48-	38.8	0.017
Binghamton, NY	35,576	99.96	49	1.39	0.0	0.000
Buffalo, NY	134,451	98.66	175	1.31-	40.2	0.052
Elmira, NY	13,699	99.94	26	1.92	0.0	0.000
Glens Falls, NY	15,222	99.63	19	1.25	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	265	0.89-	23.5	0.020
New York, NY	997,473	99.58	636	0.65-	14.0	0.009
Orange Falls, NY	30,841	99.69	42	1.35	24.7	0.032
Niagara Falls, NY	30,488	99.89	46	1.51	0.0	0.000
Poughkeepsie, NY	27,864	98.47	33	1.20	0.0	0.000
Rochester, NY	102,542	88.80	238	2.38	8.3	0.019
Syracuse, NY	75,217	99.92	137	1.83	36.5	0.066
Utica-Rome, NY	46,733	99.90	68	1.47	63.9	0.085
New Jersey	916,155	97.84	1,167	1.27-	14.0	0.017-
Atlantic City, NJ	46,406	97.93	76	1.65	39.3	0.063
Bergen-Passaic, NJ	171,246	99.45	173	1.01-	18.1	0.017-
Jersey City, NJ	64,069	99.25	63	0.99-	33.5	0.031
Middlesex, NJ	91,009	94.70	143	1.55	7.0	0.010
Monmouth-Ocean, NJ	154,643	99.57	234	1.49	12.8	0.018
Newark, NJ	211,511	99.40	202	0.96-	5.2-	0.004
Trenton, NJ	38,499	97.14	62	1.62	16.5	0.025
Vineland, NJ	16,382	96.17	16	0.97	0.0	0.000
Pennsylvania	1,648,180	98.75	2,390	1.45-	21.6	0.030
Allentown, PA-NJ	94,668	99.09	206	2.16	9.8	0.021
Altoona, PA	20,692	99.99	45	2.19	0.0	0.000
Beaver County, PA	27,562	99.95	31	1.10	69.0	0.071
Erie, PA	35,244	99.92	73	2.05	27.3	0.056
Harrisburg, PA	72,929	99.95	98	1.35	20.8	0.027
Johnstown, PA	40,260	99.97	86	2.11	12.2	0.024
Lancaster, PA	48,045	99.93	103	2.16	29.4	0.061
Philadelphia PA-NJ	569,054	95.81	707	1.26-	16.3	0.019-
Pittsburgh, PA	323,494	99.06	421	1.30-	24.7	0.030
Reading, PA	48,476	99.88	54	1.11-	0.0	0.000
Scranton, PA	122,888	99.95	135	1.10-	30.9	0.032
Sharon, PA	19,009	99.97	76	3.95+	26.1	0.103
State College, PA	10,032	99.97	24	2.37	0.0	0.000
Williamsport, PA	16,877	99.98	44	2.62	0.0	0.000
York, PA	48,541	99.96	51	1.04-	40.2	0.040

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	13,646	1.99+	19.6	0.038
East North Central	4,745,430	97.76	9,758	2.06+	18.6	0.037
Ohio	1,263,869	99.46	3,363	2.66+	19.2	0.050+
Akron, OH	75,615	99.90	191	2.53	10.8	0.026
Canton, OH	51,895	99.97	133	2.55	15.6	0.038
Cincinnati, OH-KY-IN	159,407	99.96	289	1.64	13.8	0.025
Cleveland, OH	242,585	99.71	663	2.74+	18.4	0.049
Columbus, OH	121,377	99.73	279	2.32	25.0	0.057
Dayton, OH	103,547	99.95	185	1.78	21.6	0.038
Hamilton, OH	26,009	99.95	92	3.55+	42.2	0.152
Lima, OH	19,579	99.97	47	2.41	0.0	0.000
Lorain-Elyria, OH	27,340	99.85	71	2.55	0.0	0.000
Mansfield, OH	15,230	99.96	56	3.65	0.0	0.000
Steubenville, OH-WV	21,934	98.57	96	4.30+	32.2	0.134
Toledo, OH	70,660	99.95	309	4.40+	19.0	0.083
Youngstown, OH	69,319	99.95	249	3.55+	37.8	0.128
Indiana	623,062	97.86	1,093	1.76	22.0	0.038
Anderson, IN	17,198	99.83	40	2.32	24.2	0.057
Bloomington, IN	7,913	99.87	11	1.39	0.0	0.000
Elkhart-Goshen, IN	15,647	99.92	14	0.90-	0.0	0.000
Evansville, IN-KY	34,434	95.72	55	1.62	59.8	0.086
Fort Wayne, IN	37,565	97.77	62	1.67	0.0	0.000
Gary-Hammond, IN	61,160	97.01	167	2.67+	24.3	0.064
Indianapolis, IN	118,407	93.81	197	1.69	15.3	0.025
Kokomo, IN	10,842	99.94	19	1.76	0.0	0.000
Lafayette, IN	11,228	99.92	12	1.09	97.8	0.089
Muncie, IN	13,759	99.91	6	0.44-	0.0	0.000
South Bend, IN	33,170	99.93	71	2.15	14.3	0.030
Terre Haute, IN	19,585	99.89	33	1.72	29.6	0.051
Illinois	1,265,011	95.90	2,083	1.66-	16.9	0.027
Aurora-Elgin, IL	30,946	98.68	94	3.08+	0.0	0.000
Bloomington, IL	12,672	99.94	35	2.83	26.8	0.078
Champaign, IL	13,391	99.91	44	3.33	47.4	0.149
Chicago, IL	608,135	92.94	765	1.27-	19.7	0.024
Decatur, IL	15,992	99.97	18	1.15	61.3	0.062
Joliet, IL	28,047	97.18	71	2.53	0.0	0.000
Kankakee, IL	12,020	99.94	16	1.32	0.0	0.000
Lake County, IL	36,099	96.52	33	0.91-	30.1	0.027
Peoria, IL	43,549	99.93	102	2.35	39.6	0.090
Rockford, IL	28,351	88.93	50	1.77	19.6	0.035
Springfield, IL	24,799	99.96	45	1.86	0.0	0.000

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division. State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees		
Michigan	982,444	96.86	2,261	2.29+	16.0	0.036		
Ann Arbor, MI	17,760	95.12	20	1.15	0.0	0.000		
Battle Creek, MI	16,831	99.89	57	3.40	16.6	0.058		
Benton Harbor, MI	21,618	99.88	20	0.92-	51.4	0.045		
Detroit, MI	448,826	96.43	1,030	2.29+	13.7	0.031		
Flint, MI	43,084	91.01	177	4.14+	5.6-	0.023		
Grand Rapids, MI	64,091	95.42	107	1.69	18.3	0.031		
Jackson, MI	17,046	99.82	33	1.93	60.3	0.116		
Kalamazoo, MI	21,512	99.85	50	2.35	18.9	0.046		
Lansing, MI	32,460	90.23	40	1.25	25.9	0.030		
Muskegon, MI	18,957	98.06	31	1.62	33.5	0.051		
Saginaw, MI	42,162	96.18	140	3.29+	29.0	0.093		
Wisconsin	611,044	99.60	958	1.57-	22.6	0.033		
Appleton, WI	34,483	99.96	60	1.74	34.0	0.056		
Eau Claire, WI	16,955	99.94	33	1.94	32.6	0.057		
Green Bay, WI	19,185	99.97	37	1.93	0.0	0.000		
Janesville, WI	16,529	99.85	29	1.77	0.0	0.000		
Kenosha, WI	14,291	99.91	14	0.98	0.0	0.000		
LaCrosse, WI	11,858	99.91	15	1.29	0.0	0.000		
Madison, WI	30,776	99.74	28	0.92-	0.0	0.000		
Milwaukee, WI	166,813	99.21	311	1.89	23.0	0.041		
Racine, WI	20,503	99.90	60	2.94	16.6	0.048		
Sheboygan, WI	14,461	99.98	35	2.43	0.0	0.000		
Wausau, WI	12,945	99.95	12	0.92	0.0	0.000		
West North Central	2,156,545	93.50	3,888	1.83	22.2	0.040		
Minnesota	397,258	77.30	442	1.15-	20.7	0.022		
Duluth, MN-WI	29,977	76.74	21	0.72-	45.0	0.033		
Minneapolis, MN-WI	141,769	64.45	183	1.38-	34.0	0.043		
Rochester, MN	9,393	99.67	11	1.22	93.2	0.106		
St. Cloud, MN	12,248	70.92	19	1.63	0.0	0.000		
Iowa	404,057	99.37	617	1.55-	14.5	0.022		
Cedar Rapids, IA	19,323	99.94	47	2.47	40.6	0.103		
Davenport, IA-IL	44,646	99.94	154	3.47+	0.0	0.000		
Des Moines, IA	40,067	94.50	58	1.49	0.0	0.000		
Dubuque, IA	11,460	99.95	29	2.60	0.0	0.000		
Iowa City, IA	6,240	99.90	7	1.15	0.0	0.000		
Sioux City, IA-NE	15,951	99.96	13	0.83-	0.0	0.000		
Waterloo, IA	19,521	99.96	33	1.70	0.0	0.000		

See notes at end of table.



Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Missouri	655,875	98.17	1,481	2.28+	25.4	0.056		
Columbia, MO	8,560	99.98	34	4.03	29.0	0.115		
Joplin, MO	19,275	99.95	81	4.21+	12.5	0.050		
Kansas City, MO-KS	154,919	95.72	293	1.93	16.7	0.032		
St. Joseph, MO	13,630	99.97	34	2.55	0.0	0.000		
St. Louis, MO-IL	283,167	97.43	573	2.06	26.2	0.052		
Springfield, MO	27,676	99.94	60	2.19	16.8	0.036		
North Dakota	85,433	98.28	162	1.88	25.0	0.045		
Bismarck, ND	8,160	95.13	29	3.56	0.0	0.000		
Fargo, ND-MN	14,138	96.57	27	1.95	31.7	0.069		
Grand Forks, ND	5,687	99.95	6	1.07	0.0	0.000		
South Dakota	96,216	99.59	114	1.19-	43.9	0.050		
Rapid City, SD	7,152	99.89	17	2.35	116.6	0.273		
Sioux Falls, SD	13,275	99.93	12	0.92	0.0	0.000		
Nebraska	209,910	98.52	324	1.57	18.1	0.028		
Lincoln, NE	20,994	98.50	15	0.74-	0.0	0.000		
Omaha, NE-IA	57,609	95.39	123	2.18	24.0	0.052		
Kansas	307,796	95.82	748	2.48+	20.9	0.050		
Lawrence, KS	4,965	87.78	3	0.62	0.0	0.000		
Topeka, KS	18,983	97.26	71	3.86+	27.5	0.105		
Wichita, KS	45,844	88.57	132	2.95+	15.2	0.043		
South	8,980,101	97.94	18,307	2.03+	21.9	0.043+		
South Atlantic	4,668,855	96.31	8,542	1.81	20.6	0.036		
Delaware	70,251	99.94	118	1.67	26.9	0.042		
Wilmington, DE-NJ-MD	58,114	99.65	67	1.15-	32.0	0.034		
Maryland	436,606	99.49	674	1.54-	19.5	0.029		
Baltimore, MD	244,878	99.90	347	1.42-	17.7	0.024		
Cumberland, MD-WV	17,051	99.95	9	0.53-	112.0	0.057		
Hagerstown, MD	14,522	99.95	37	2.55	0.0	0.000		
District of Col.	66,196	99.75	44	0.69-	0.0	0.000		
Washington, DC-MD-VA	261,121	99.05	323	1.25-	18.5	0.022		

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	844	1.49-	19.1	0.028
Charlottesville, VA	12,020	99.92	6	0.50-	0.0	0.000
Danville, VA	15,532	99.99	9	0.58-	119.9	0.063
Lynchburg, VA	18,110	99.99	14	0.78-	71.0	0.054
Norfolk, VA	102,601	99.96	241	2.34	24.9	0.058
Richmond, VA	85,698	99.98	151	1.78	13.4	0.023
Roanoke, VA	30,622	99.98	27	0.90-	35.5	0.032
West Virginia	244,259	98.98	481	1.96	16.3	0.031
Charleston, WV	34,215	99.96	55	1.50	0.0	0.000
Huntington, WV-KY-OH	40,891	99.95	104	2.54	0.0	0.000
Parkersburg, WV-OH	19,888	99.94	36	1.83	0.0	0.000
Wheeling, WV-OH	22,016	82.51	84	3.89+	34.8	0.136
North Carolina	689,138	99.93	968	1.40-	24.2	0.033
Asheville, NC	24,469	99.92	46	1.90	0.0	0.000
Burlington, NC	14,505	99.99	15	1.03	0.0	0.000
Charlotte, NC	109,337	99.79	125	1.14-	40.4	0.045
Fayetteville, NC	13,388	99.98	14	1.03	149.6	0.149
Greensboro, NC	99,387	99.97	132	1.33-	33.3	0.040
Hickory, NC	23,392	99.97	54	2.28	0.0	0.000
Jacksonville, NC	5,134	99.86	11	2.09	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	80	1.43	24.8	0.035
Wilmington, NC	12,634	99.97	37	2.93	52.9	0.159
South Carolina	329,020	99.44	479	1.44-	26.0	0.036
Anderson, SC	16,583	99.70	25	1.49	0.0	0.000
Charleston, SC	34,246	98.90	72	2.08	29.0	0.058
Columbia, SC	35,361	99.98	47	1.33	22.5	0.028
Florence, SC	11,195	99.96	24	2.14	86.1	0.178
Greenville, SC	65,893	98.01	62	0.93-	31.5	0.030
Georgia	561,716	99.71	1,222	2.18+	22.2	0.048
Albany, GA	9,292	99.92	18	1.94	56.2	0.107
Athens, GA	13,510	99.96	27	2.01	0.0	0.000
Atlanta, GA	189,539	99.27	421	2.24	31.3	0.068
Augusta, GA-SC	32,938	99.93	28	0.85-	36.3	0.030
Columbus, GA-AL	22,847	99.96	46	2.01	0.0	0.000
Macon, GA	25,929	99.97	74	2.88	12.9	0.038
Savannah, GA	25,338	99.94	50	1.96	0.0	0.000

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	3,712	2.14+	19.6	0.042
Bradenton, FL	42,906	99.68	86	1.97	11.2	0.022
Daytona Beach, FL	62,616	92.90	183	2.87+	17.0	0.046
Fort Lauderdale, FL	181,839	81.09	242	1.33-	32.3	0.041
Fort Myers, FL	61,428	99.65	130	2.00	8.0	0.015
Fort Pierce, FL	41,198	99.28	77	1.77	56.2	0.093
FT. Walton Beach, FL	10,169	99.88	15	1.41	70.0	0.097
Gainesville, FL	16,758	99.58	30	1.76	36.4	0.058
Jacksonville, FL	80,895	98.22	236	2.91+	29.1	0.085
Lakeland, FL	55,495	99.56	88	1.54	0.0	0.000
Melbourne, FL	46,501	99.72	114	2.33	26.5	0.062
Miami-Hialeah, FL	168,502	79.57	134	0.82-	21.5	0.017
Naples, FL	23,433	99.75	39	1.55	57.0	0.081
Ocala, FL	31,367	99.50	59	1.77	0.0	0.000
Orlando, FL	90,604	98.55	221	2.41	44.7	0.109
Panama City, FL	11,817	99.70	51	4.16+	19.1	0.082
Pensacola, FL	29,972	99.89	48	1.57	0.0	0.000
Sarasota, FL	77,895	99.81	207	2.57+	14.3	0.036
Tallahassee, FL	17,414	97.85	49	2.81	19.8	0.056
Tampa, FL	323,951	87.05	1,060	3.26+	12.5	0.042
West Palm Beach, FL	139,729	85.22	183	1.28-	16.1	0.020
East South Central	1,726,272	99.80	3,695	2.14+	19.0	0.039
Kentucky	422,657	99.70	814	1.92	19.8	0.036
Lexington, KY	31,008	98.87	31	1.01-	0.0	0.000
Louisville, KY-IN	107,485	99.20	225	2.11	26.8	0.055
Owensboro, KY	10,319	99.96	48	4.67+	21.6	0.095
Tennessee	550,327	99.65	1,138	2.06	18.4	0.037
Chattanooga, TN-GA	50,061	99.97	69	1.38	27.9	0.039
Clarksville, TN-KY	12,541	99.91	54	4.30+	0.0	0.000
Jackson, TN	10,064	99.95	12	1.21	0.0	0.000
Johnson City, TN-VA	55,068	99.97	74	1.33	13.8	0.018
Knoxville, TN	70,970	99.96	145	2.03	13.7	0.028
Memphis, TN-AR-MS	88,836	98.06	142	1.61	13.9	0.022
Nashville, TN	92,994	99.96	293	3.16+	13.6	0.042

See notes at end of table.



Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	1,083	2.33+	21.3	0.048
Anniston, AL	13,124	99.97	19	1.43	0.0	0.000
Birmingham, AL	108,546	99.98	266	2.47+	23.0	0.054
Dothan, AL	12,690	99.94	14	1.10	0.0	0.000
Florence, AL	16,687	99.97	44	2.61	0.0	0.000
Gadsden, AL	14,295	99.97	17	1.17	0.0	0.000
Huntsville, AL	17,137	99.96	48	2.77	22.2	0.057
Mobile, AL	50,513	99.96	162	3.16+	24.5	0.078
Montgomery, AL	29,832	99.97	51	1.73	19.6	0.033
Tuscaloosa, AL	13,604	99.99	35	2.60	27.7	0.072
Mississippi	290,157	99.98	660	2.28+	15.2	0.033
Biloxi-Gulfport, MS	18,079	99.97	81	4.38+	25.6	0.108
Jackson, MS	35,305	99.98	73	2.09	14.0	0.028
Pascagoula, MS	8,556	99.88	35	3.95	57.5	0.229
West South Central	2,584,974	99.74	6,070	2.34+	25.5	0.060+
Arkansas	321,739	99.96	888	2.73+	21.1	0.057
Fayetteville, AR	11,803	99.95	42	3.53	22.8	0.082
Fort Smith, AR-OK	21,413	99.98	32	1.49	0.0	0.000
Little Rock, AR	50,966	99.99	103	2.03	9.9	0.019
Pine Bluff, AR	11,012	99.98	10	0.92	0.0	0.000
Louisiana	415,968	99.98	1,212	2.92+	25.4	0.073+
Alexandria, LA	13,819	99.96	65	4.76+	28.9	0.143
Baton Rouge, LA	39,583	99.97	85	2.14	23.2	0.050
Houma-Thibodaux, LA	13,501	100.00	77	5.59+	13.3	0.073
Lafayette, LA	14,620	99.99	55	3.76	54.4	0.204
Lake Charles, LA	16,436	99.98	65	3.87+	0.0	0.000
Monroe, LA	14,648	99.99	15	1.04	0.0	0.000
New Orleans, LA	118,708	99.98	313	2.65+	25.5	0.067
Shreveport, LA	36,822	99.98	119	3.30+	23.8	0.081
Oklahoma	378,716	99.02	598	1.58	30.8	0.049
Enid, OK	8,215	99.94	8	0.99	0.0	0.000
Lawton, OK	8,221	99.99	17	2.04	0.0	0.000
Oklahoma City, OK	88,646	97.45	142	1.62	20.9	0.033
Tulsa, OK	71,032	98.13	139	1.97	40.6	0.083

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	3,372	2.28+	25.7	0.059+
Abilene, TX	13,100	99.96	36	2.78	25.5	0.075
Amarillo, TX	19,063	99.97	32	1.67	0.0	0.000
Austin, TX	47,578	99.95	61	1.28	0.0	0.000
Beaumont, TX	42,323	99.98	106	2.47	27.3	0.068
Brazoria, TX	12,486	99.78	35	2.72	0.0	0.000
Brownsville, TX	20,169	99.86	35	1.66	57.3	0.095
Bryan, TX	6,955	99.96	5	0.72	211.2	0.141
Corpus Christi, TX	28,417	95.56	98	3.37+	20.2	0.068
Dallas, TX	172,118	99.95	468	2.74+	36.8	0.103+
El Paso, TX	37,292	99.94	27	0.70-	0.0	0.000
Fort Worth, TX	97,947	99.96	217	2.22	37.2	0.080
Galveston, TX	19,376	99.94	41	2.07	0.0	0.000
Houston, TX	187,992	99.85	365	1.92	16.4	0.031
Killeen-Temple, TX	17,182	99.97	17	0.98	0.0	0.000
Laredo, TX	8,421	99.99	15	1.76	57.6	0.115
Longview, TX	20,547	99.98	80	3.92+	46.9	0.191
Lubbock, TX	18,957	99.97	47	2.44	38.9	0.102
McAllen, TX	27,402	99.82	38	1.31	25.8	0.034
Midland, TX	7,362	99.96	33	4.40	0.0	0.000
Odessa, TX	9,207	99.99	43	4.52+	45.0	0.212
San Angelo, TX	11,213	99.99	44	3.90	22.2	0.087
San Antonio, TX	107,989	99.28	211	1.94	23.5	0.045
Snarman-Denison, TX	14,532	99.99	79	5.46+	37.2	0.203
Texas, TX-AR	15,315	99.99	60	3.93+	17.2	0.064
Tyler, TX	18,223	99.98	70	3.80+	43.9	0.160
Victoria, TX	6,871	99.97	16	2.27	0.0	0.000
Waco, TX	23,624	99.99	22	0.94-	0.0	0.000
Wichita Falls, TX	14,462	99.97	46	3.22	21.3	0.068
West	4,539,951	93.08	9,536	2.07+	23.2	0.048+
Mountain	1,200,638	94.36	1,891	1.54-	28.3	0.043
Montana	97,248	99.90	169	1.70	29.7	0.050
Billings, MT	12,097	99.88	21	1.71	0.0	0.000
Great Falls, MT	9,076	99.91	18	1.95	0.0	0.000
Idaho	109,822	99.77	160	1.41	18.8	0.026
Boise City, ID	18,471	99.90	20	1.07	0.0	0.000
Wyoming	42,408	99.91	92	2.13	41.3	0.092
Casper, WY	5,379	99.91	16	2.96	0.0	0.000
Cheyenne, WY	6,886	99.96	5	0.72	0.0	0.000

See notes at end of table.

Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	307	1.15-	10.0	0.011-
Boulder-Longmont, CO	15,143	97.96	24	1.62	0.0	0.000
Colorado Springs, CO	24,899	95.03	32	1.28	0.0	0.000
Denver, CO	119,624	94.10	129	1.09-	15.6	0.016
Fort Collins, CO	15,089	99.71	14	0.92	0.0	0.000
Greeley, CO	11,610	99.62	20	1.70	0.0	0.000
Pueblo, CO	15,372	94.43	22	1.42	0.0	0.000
New Mexico	125,371	92.49	211	1.64	27.4	0.046
Albuquerque, NM	33,783	81.01	49	1.45	62.2	0.088
Las Cruces, NM	9,375	99.94	7	0.72-	0.0	0.000
Santa Fe, NM	8,454	93.66	12	1.39	0.0	0.000
Arizona	348,748	91.33	609	1.69	33.4	0.055
Phoenix, AZ	187,381	86.74	343	1.79	38.6	0.067
Tucson, AZ	70,550	96.06	95	1.32	30.9	0.041
Utah	128,579	99.92	177	1.34-	57.8	0.075
Provo-Orem, UT	16,076	99.93	27	1.62	71.7	0.120
Salt Lake City, UT	77,243	99.94	103	1.31-	60.4	0.075
Nevada	81,799	86.15	166	1.92	12.4	0.023
Las Vegas, NV	45,252	82.98	123	2.56	16.9	0.043
Reno, NV	19,133	89.17	21	1.05	0.0	0.000
Pacific	3,339,313	92.62	7,645	2.27+	22.0	0.049+
Washington	461,706	92.41	1,242	2.66+	22.7	0.059
Bellevue, WA	13,629	99.51	46	3.36	21.9	0.072
Bremerton, WA	15,439	96.59	46	2.94	0.0	0.000
Olympia, WA	14,254	90.98	18	1.26	0.0	0.000
Richland, WA	12,559	99.85	39	2.98	0.0	0.000
Seattle, WA	159,828	86.57	451	2.84+	26.5	0.075
Spokane, WA	41,237	94.51	142	3.47+	21.2	0.071
Tacoma, WA	50,245	97.24	117	2.30	35.2	0.078
Vancouver, WA	17,048	80.32	26	1.52	0.0	0.000
Yakima, WA	22,738	99.74	29	1.25	35.9	0.042
Oregon	303,778	86.84	777	2.53+	34.2	0.087+
Eugene, OR	28,947	88.67	104	3.54+	19.8	0.068
Medford, OR	20,326	99.78	49	2.33	0.0	0.000
Portland, OR	99,155	72.79	220	2.29	44.3	0.101
Salem, OR	33,249	90.39	105	3.17+	45.1	0.147

See notes at end of table.



Table 3. Carotid endarterectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	5,552	2.23+	19.8	0.044
Anaheim-Santa Ana, CA	167,171	89.39	428	2.61+	29.9	0.077
Bakersfield, CA	44,969	99.76	101	2.16	30.8	0.064
Chico, CA	27,102	99.09	109	3.89+	19.2	0.071
Fresno, CA	58,425	99.90	127	2.15	15.6	0.033
Los Angeles, CA	677,939	91.40	1,391	2.08+	26.7	0.056
Merced, CA	13,462	99.86	43	3.09	22.0	0.072
Modesto, CA	33,619	98.80	121	3.54+	8.2	0.028
Oakland, CA	188,258	99.08	353	1.87	13.9	0.026
Oxnard-Ventura, CA	49,488	93.74	118	2.36	8.6	0.020
Redding, CA	17,796	99.73	87	4.67+	0.0	0.000
Riverside, CA	203,246	90.92	721	3.48+	16.0	0.058
Sacramento, CA	120,273	91.81	254	2.07	15.3	0.033
Salinas, CA	29,131	99.86	45	1.52	0.0	0.000
San Diego, CA	205,402	91.35	346	1.67	20.0	0.033
San Francisco, CA	163,753	89.02	202	1.25-	39.5	0.048
San Jose, CA	105,258	99.50	233	2.21	8.4	0.019
Santa Barbara, CA	38,021	99.70	76	2.00	0.0	0.000
Santa Cruz, CA	24,640	99.77	52	2.12	0.0	0.000
Santa Rosa, CA	44,775	99.49	88	1.95	34.5	0.065
Stockton, CA	40,855	91.54	96	2.29	20.9	0.046
Vallejo, CA	35,778	98.59	84	2.31	35.8	0.081
Visalia, CA	28,811	99.91	108	3.64+	0.0	0.000
Yuba City, CA	11,835	99.35	16	1.30	0.0	0.000
Alaska	16,348	99.78	23	1.31	52.0	0.059
Anchorage, AK	5,625	99.75	8	1.34	150.0	0.175
Hawaii	80,233	83.64	51	0.59-	41.7	0.023
Honolulu, HI	57,680	83.31	41	0.67-	26.3	0.016

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate ( $p < .01$ ).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Partial excision of the large intestine

Partial excision of the large intestine accounted for 100,027 discharges among aged Medicare enrollees in 1986, or 1 percent of all admissions. There were 3.75 discharges per 1,000 enrollees during that year. The 30-day post-admission death rate was 70.2 per 1,000 discharges, or about 7 percent. The 30-day post-admission mortality rate per 1,000 enrollees was 0.262 (Table 1).

## Age and sex patterns

Men had higher discharge rates and higher post-admission death rates than women did. These relationships were consistent across all age groups. The discharge rate was highest for persons aged 75–84 years (4.80 per 1,000 enrollees) and lowest for persons aged 65–74 years (3.11 per 1,000 enrollees). The 30-day post-admission death rate per 1,000 discharges increased with age, rising from 47.3 for persons aged 65–74 years to 136.7 for persons 85 years of age or over.

## Patterns by race

White enrollees had a higher discharge rate (3.83 per 1,000 enrollees) than black enrollees (3.08). The 30-day post-admission death rate per 1,000 discharges was 12 percent higher among black persons

NOTE: Partial excision of the large intestine is ICD-9-CM code 45.7.

(78.5 deaths) than among white persons (70.2). These patterns were consistent across all age and sex groups.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic areas. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

States in the New England and Middle Atlantic Divisions (as well as Florida, Iowa, and Alaska) had the highest discharge rates for partial excision of the large intestine as shown in Figure 1. With the exception of Florida, the lowest discharge rates were found in those Southern States from Arkansas east and north through Virginia. Rhode Island had the highest discharge rate at 5.01 per 1,000 enrollees and Wyoming had the lowest rate at 2.76 per 1,000 enrollees (Table 2).

The range in the discharge rate across MSAs and rural areas is shown in the boxplots in Figure 2. Median discharge rates were highest in the New England, Middle Atlantic, and West North Central Divisions and lowest in the East South Central and West South Central Divisions.

## Post-admission mortality rates

Except for high rates in the Rocky Mountain States, no distinct geographic patterns of 30-day post-admission mortality rates per 1,000 enrollees were apparent (Table 2). States with the highest rates were often contiguous to States with the lowest rates. Thirty-day post-admission death rates per 1,000 discharges were highest (79.8) in the East South Central Division and lowest (61.3) in the New England Division.

## Urban-rural patterns

In the United States as a whole, the discharge rate for partial excision of the large intestine for persons in rural counties was 9 percent lower than that for persons in urban counties (3.49 and 3.84 per 1,000 enrollees, respectively). The 30-day post-admission death rate was slightly higher in rural counties (73.6 deaths per 1,000 discharges) than in urban counties (69.0 deaths per 1,000 discharges), although neither was statistically different from the U.S. total.

Table 1. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
All persons (1)	26,698,924	96.70	100,027	3.75	70.2	0.262
65-74 years	16,162,594	96.33	50,313	3.11	47.3	0.147
75-84 years	8,020,447	96.96	38,538	4.80	80.8	0.388
85 years or over	2,515,883	98.32	11,176	4.44	136.7	0.607
Men	10,650,991	96.01	41,287	3.88	73.3	0.284
65-74 years	7,056,445	95.90	22,680	3.21	51.6	0.165
75-84 years	2,912,366	96.02	15,196	5.22	88.0	0.459
85 years or over	682,180	97.22	3,411	5.00	152.2	0.760
Women	16,047,933	97.16	58,740	3.66	68.0	0.248
65-74 years	9,106,149	96.66	27,633	3.03	43.7	0.132
75-84 years	5,108,081	97.51	23,342	4.57	76.1	0.347
85 years or over	1,833,703	98.74	7,765	4.23	129.9	0.550
White	23,574,066	96.62	90,237	3.83	70.2	0.268
65-74 years	14,207,064	96.23	45,051	3.17	46.8	0.148
75-84 years	7,134,499	96.88	34,942	4.90	80.7	0.395
85 years or over	2,232,503	98.26	10,244	4.59	137.0	0.628
Men	9,391,016	95.94	37,233	3.96	72.8	0.288
65-74 years	6,216,472	95.83	20,396	3.28	51.0	0.167
75-84 years	2,573,989	95.94	13,724	5.33	87.1	0.464
85 years or over	600,555	97.12	3,113	5.18	152.9	0.792
Women	14,183,050	97.07	53,004	3.74	68.3	0.255
65-74 years	7,990,592	96.55	24,655	3.09	43.4	0.133
75-84 years	4,560,510	97.42	21,218	4.65	76.6	0.356
85 years or over	1,631,948	98.69	7,131	4.37	130.0	0.568
Black	1,991,943	97.86	6,130	3.08	78.5	0.241
65-74 years	1,213,014	97.54	3,217	2.65	58.1	0.154
75-84 years	583,429	98.11	2,261	3.88	89.3	0.346
85 years or over	195,500	99.11	652	3.34	141.1	0.470
Men	792,788	97.49	2,447	3.09	90.7	0.280
65-74 years	519,305	97.28	1,339	2.58	68.0	0.175
75-84 years	215,401	97.67	882	4.09	111.1	0.454
85 years or over	58,082	98.74	226	3.89	146.0	0.568
Women	1,199,155	98.10	3,683	3.07	70.3	0.215
65-74 years	693,709	97.74	1,878	2.71	51.1	0.138
75-84 years	368,028	98.37	1,379	3.75	75.4	0.282
85 years or over	137,418	99.26	426	3.10	138.5	0.429

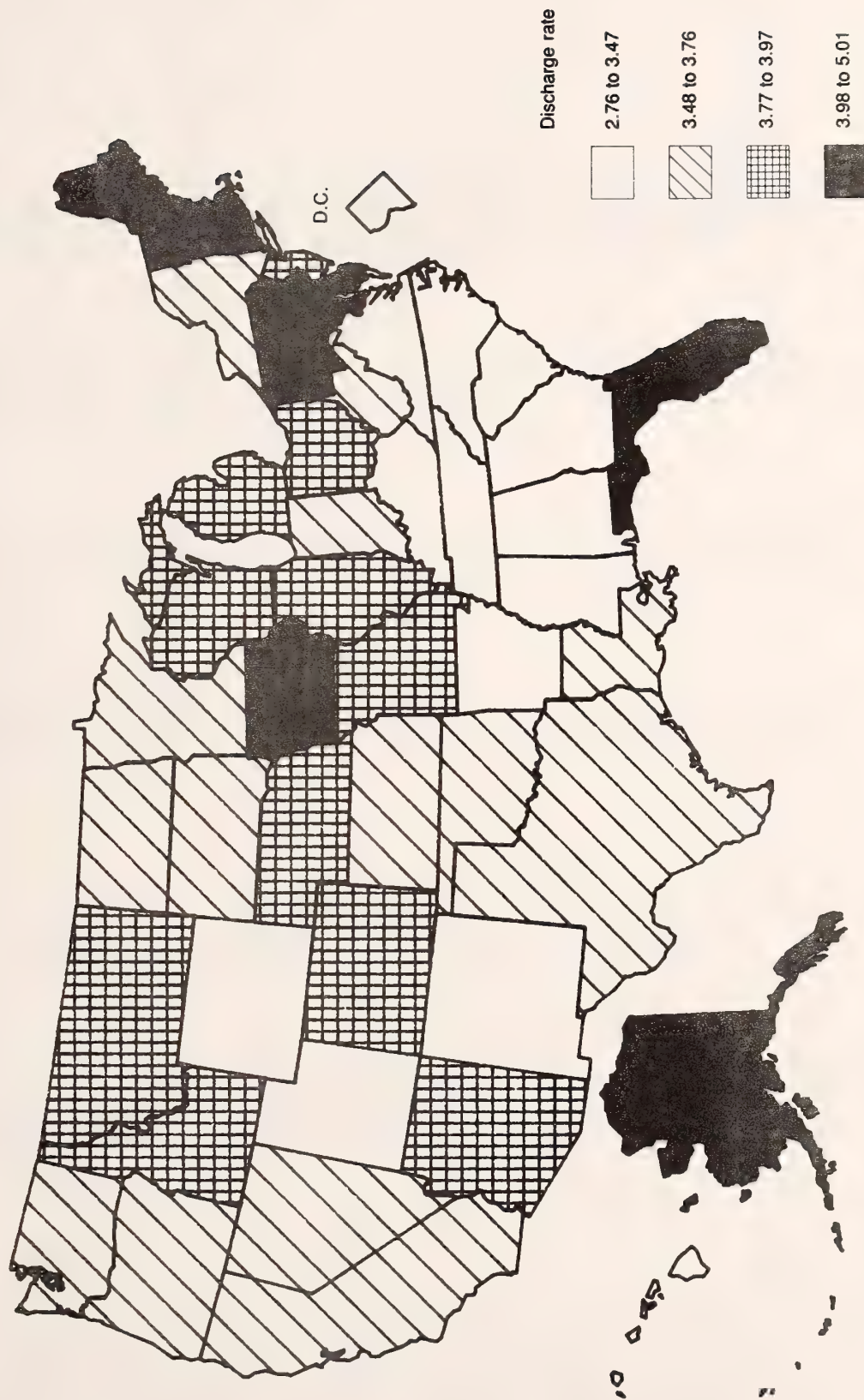
(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

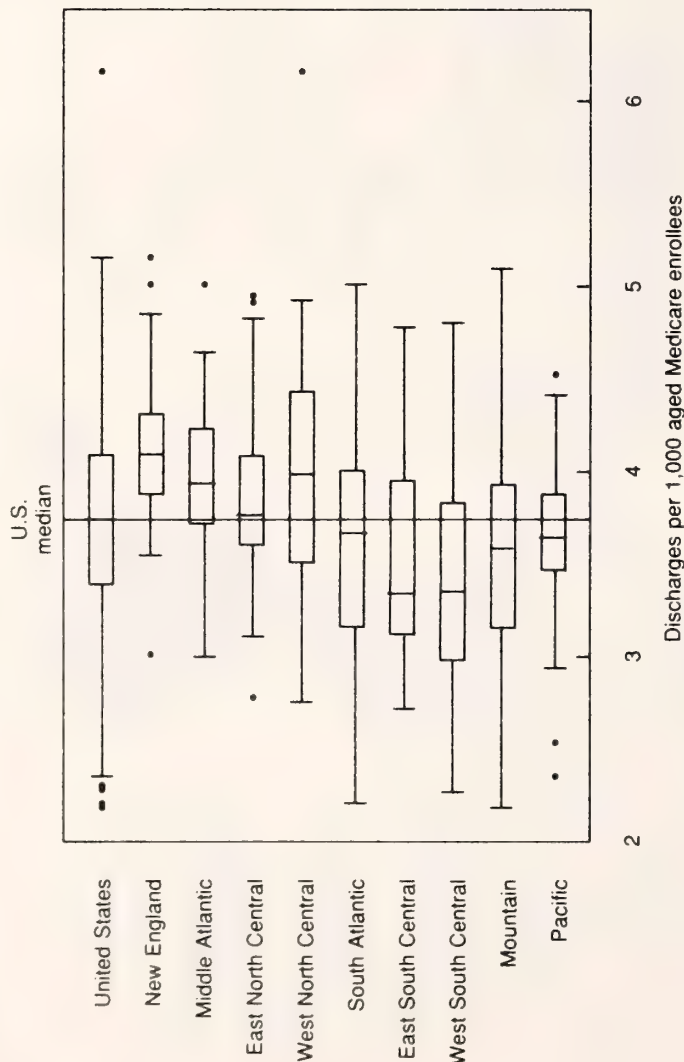


**Figure 1. Partial excision of the large intestine: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Partial excision of the large intestine: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Cheyenne, WY	2.19
	Jacksonville, NC	2.22
	Abilene, TX	2.27
	El Paso, TX	2.28
	Monroe, LA	2.30
New England	Iowa City, IA	6.16
	Bangor, ME	3.04
	Providence, RI	5.01
Middle Atlantic	Lewiston-Auburn, ME	5.16
	Glens Falls, NY	5.03
East North Central	Kokomo, IN	2.78
	Bloomington, IL	4.92
	Jackson, MI	4.95
West North Central	Iowa City, IA	6.16
Pacific	Rural counties, HI	2.34
	Visalia, CA	2.53
	Redding, CA	4.52

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Non-HMD enrollment			Discharges		30-day post-admission deaths	
Area of residence	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	100,027	3.75	70.2	0.261
Metropolitan	19,363,284	95.80	74,319	3.84+	69.0	0.266
Rural	7,335,640	99.16	25,708	3.49-	73.6	0.252
Northeast	6,276,897	98.04	25,025	3.98+	66.1	0.264
Metropolitan	5,564,648	97.84	22,124	3.97+	65.6	0.263
Rural	712,249	99.69	2,901	4.07+	70.3	0.283
New England	1,569,313	96.20	6,532	4.15+	61.3-	0.256
Metropolitan	1,342,886	95.66	5,541	4.12+	60.6-	0.252
Rural	226,427	99.53	991	4.35+	65.5	0.282
Maine	153,209	99.88	636	4.12	57.5	0.235
Metropolitan	82,345	99.89	327	3.95	45.5	0.179
Rural	70,864	99.87	309	4.32	70.2	0.300
New Hampshire	114,752	98.98	489	4.26	77.0	0.339
Metropolitan	74,135	98.55	317	4.28	86.1	0.378
Rural	40,617	99.77	172	4.23	60.8	0.269
Vermont	62,781	99.82	265	4.19	60.0	0.249
Metropolitan	10,422	99.91	43	4.10	21.9	0.094
Rural	52,359	99.80	222	4.21	67.9	0.280
Massachusetts	709,478	93.75	2,904	4.07+	64.2	0.262
Metropolitan	659,025	93.40	2,672	4.03	64.4	0.261
Rural	50,453	98.58	232	4.59	61.6	0.275
Rhode Island	132,332	97.59	664	5.01+	66.4	0.340
Metropolitan	132,332	97.59	664	5.01+	66.4	0.340
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	1,574	3.98	50.6-	0.202-
Metropolitan	384,627	97.50	1,518	3.96	50.3-	0.201-
Rural	12,134	99.66	56	4.61	59.7	0.245
Middle Atlantic	4,707,584	98.68	18,493	3.93+	67.9	0.268
Metropolitan	4,221,762	98.55	16,583	3.93+	67.3	0.266
Rural	485,822	99.76	1,910	3.93	72.9	0.283
New York	2,143,249	98.98	8,117	3.76	68.4	0.259
Metropolitan	1,922,371	98.89	7,260	3.75	67.4	0.255
Rural	220,878	99.75	857	3.86	77.0	0.297

See notes at end of table.



Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	3,586	3.94	64.0	0.254
Metropolitan	916,155	97.84	3,586	3.94	64.0	0.254
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	6,790	4.14+	69.2	0.285
Metropolitan	1,383,236	98.56	5,737	4.17+	69.2	0.289
Rural	264,944	99.78	1,053	3.99	69.4	0.271
North Central	6,901,975	96.39	26,751	3.86+	71.5	0.274
Metropolitan	4,398,761	95.22	17,332	3.94+	71.7	0.282
Rural	2,503,214	98.51	9,419	3.71	71.1	0.260
East North Central	4,745,430	97.76	18,232	3.85	70.6	0.270
Metropolitan	3,453,558	97.13	13,386	3.89+	71.3	0.278
Rural	1,291,872	99.47	4,846	3.73	68.9	0.252
Ohio	1,263,869	99.46	4,886	3.89	73.2	0.287
Metropolitan	987,528	99.60	3,858	3.93	73.1	0.293
Rural	276,341	98.95	1,028	3.72	73.6	0.264
Indiana	623,062	97.86	2,322	3.73	78.4	0.288
Metropolitan	399,457	97.01	1,514	3.80	77.6	0.293
Rural	223,605	99.41	808	3.60	79.9	0.278
Illinois	1,265,011	95.90	4,893	3.86	69.2	0.264
Metropolitan	952,934	94.73	3,698	3.89	68.9	0.266
Rural	312,077	99.68	1,195	3.78	70.2	0.258
Michigan	982,444	96.86	3,732	3.82	73.3	0.275
Metropolitan	744,347	96.06	2,821	3.82	75.9	0.284
Rural	238,097	99.44	911	3.84	65.4	0.249
Wisconsin	611,044	99.60	2,399	3.89	57.3-	0.225
Metropolitan	369,292	99.43	1,495	4.02	57.9	0.236
Rural	241,752	99.86	904	3.70	56.2	0.209
West North Central	2,156,545	93.50	8,519	3.88	73.3	0.282
Metropolitan	945,203	88.82	3,946	4.13+	73.1	0.299
Rural	1,211,342	97.51	4,573	3.69	73.4	0.268
Minnesota	397,258	77.30	1,439	3.55	80.2	0.280
Metropolitan	187,915	67.07	706	3.70	89.4	0.325
Rural	209,343	89.55	733	3.42	71.5	0.240

See notes at end of table.

Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 discharges
Iowa	404,057	99.37	1,786	4.35+	52.0-	0.222	52.0-	0.222	52.0-
	136,818	98.24	642	4.66+	45.8-	0.206	45.8-	0.206	45.8-
	267,239	99.96	1,144	4.19	55.3	0.229	55.3	0.229	55.3
Missouri	655,875	98.17	2,609	3.93	83.5	0.327+	83.5	0.327+	83.5
	383,255	96.99	1,660	4.29+	78.1	0.337	78.1	0.337	78.1
	272,620	99.88	949	3.43	93.1	0.313	93.1	0.313	93.1
North Dakota	85,433	98.28	315	3.62	71.3	0.251	71.3	0.251	71.3
	22,964	98.14	90	3.86	75.7	0.289	75.7	0.289	75.7
	62,469	98.34	225	3.53	69.6	0.237	69.6	0.237	69.6
South Dakota	96,216	99.59	369	3.76	84.9	0.317	84.9	0.317	84.9
	20,427	99.92	92	4.48	42.3	0.190	42.3	0.190	42.3
	75,789	99.51	277	3.57	98.6	0.350	98.6	0.350	98.6
Nebraska	209,910	98.52	851	3.97	74.7	0.304	74.7	0.304	74.7
	70,076	95.86	295	4.17	88.3	0.374	88.3	0.374	88.3
	139,834	99.91	556	3.87	68.0	0.272	68.0	0.272	68.0
Kansas	307,796	95.82	1,150	3.67	69.7	0.248	69.7	0.248	69.7
	123,748	93.24	461	3.71	62.3	0.222	62.3	0.222	62.3
	184,048	97.63	689	3.65	74.4	0.264	74.4	0.264	74.4
South	8,980,101	97.94	31,874	3.55-	73.5	0.259	73.5	0.259	73.5
	5,757,016	96.87	21,495	3.75	71.9	0.269	71.9	0.269	71.9
	3,223,085	99.91	10,379	3.22-	76.9	0.241	76.9	0.241	76.9
South Atlantic	4,668,855	96.31	17,066	3.67	69.3	0.253	69.3	0.253	69.3
	3,313,125	94.94	12,782	3.87	69.2	0.268	69.2	0.268	69.2
	1,355,730	99.84	4,284	3.19-	69.7	0.218-	69.7	0.218-	69.7
Delaware	70,251	99.94	287	4.15	80.5	0.355	80.5	0.355	80.5
	44,355	99.95	175	4.00	84.0	0.352	84.0	0.352	84.0
	25,896	99.94	112	4.39	75.3	0.360	75.3	0.360	75.3
Maryland	436,606	99.49	1,777	4.11	76.7	0.313	76.7	0.313	76.7
	395,091	99.44	1,630	4.17+	77.1	0.321	77.1	0.321	77.1
	41,515	99.95	147	3.55	72.9	0.241	72.9	0.241	72.9
District of Col.	66,196	99.75	230	3.44	78.5	0.260	78.5	0.260	78.5
	66,196	99.75	230	3.44	78.5	0.260	78.5	0.260	78.5
	0	0.00	0	0.00	0.0	0.000	0.0	0.000	0.0

See notes at end of table.

Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,894	3.38-	67.3	0.227
	355,193	99.87	1,255	3.58	64.6	0.228
	210,942	99.97	639	3.04-	72.3	0.225
West Virginia	244,259	98.98	874	3.58	71.4	0.249
	90,704	97.39	385	4.26	69.7	0.301
	153,555	99.95	489	3.18-	72.9	0.219
North Carolina	689,138	99.93	2,050	3.01-	59.9	0.176-
	346,905	99.89	1,105	3.22-	62.9	0.198-
	342,233	99.96	945	2.80-	56.4	0.156-
South Carolina	329,020	99.44	1,114	3.45	69.7	0.235
	186,873	99.05	675	3.68	70.6	0.257
	142,147	99.95	439	3.14-	68.2	0.207
Georgia	561,716	99.71	1,797	3.23-	81.8	0.258
	313,319	99.54	1,037	3.35	79.3	0.264
	248,397	99.93	760	3.08-	85.1	0.252
Florida	1,705,534	90.97	7,043	4.12+	66.5	0.274
	1,514,489	90.04	6,290	4.13+	66.6	0.276
	191,045	99.17	753	3.99	65.7	0.259
East South Central	1,726,272	99.80	5,767	3.33-	79.8+	0.261
	873,594	99.64	3,122	3.58	75.6	0.270
	852,678	99.97	2,645	3.08-	84.8+	0.250
Kentucky	422,657	99.70	1,450	3.42	90.0+	0.302
	183,264	99.37	703	3.84	76.9	0.296
	239,393	99.96	747	3.11-	102.6+	0.307
Tennessee	550,327	99.65	1,907	3.47	73.9	0.255
	342,007	99.46	1,263	3.70	71.6	0.266
	208,320	99.96	644	3.09-	78.4	0.239
Alabama	463,131	99.97	1,470	3.18-	76.5	0.237
	281,960	99.97	944	3.36	75.2	0.253
	181,171	99.97	526	2.89-	79.0	0.212
Mississippi	290,157	99.98	940	3.21-	81.1	0.249
	66,363	99.96	212	3.21	97.2	0.305
	223,794	99.98	728	3.21-	76.5	0.234

See notes at end of table.



Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central Metropolitan Rural	2,584,974	99.74	9,041	3.49-	77.5	0.267
	1,570,297	99.59	5,591	3.57	76.1	0.271
	1,014,677	99.97	3,450	3.36-	79.7	0.262
Arkansas Metropolitan Rural	321,739	99.96	1,077	3.33-	59.0	0.194-
	100,966	99.98	372	3.67	51.0	0.186
	220,773	99.95	705	3.17-	63.2	0.198
Louisiana Metropolitan Rural	415,968	99.98	1,451	3.48	86.0	0.286
	268,137	99.98	975	3.65	80.2	0.281
	147,831	99.99	476	3.19	97.6	0.295
Oklahoma Metropolitan Rural	378,716	99.02	1,362	3.56	81.0	0.284
	180,038	98.00	659	3.64	69.9	0.252
	198,678	99.96	703	3.48	91.3	0.311
Texas Metropolitan Rural	1,468,551	99.81	5,151	3.50-	78.0	0.275
	1,021,156	99.73	3,585	3.52	78.7	0.280
	447,395	99.97	1,566	3.46	76.5	0.262
West Metropolitan Rural	4,539,951	93.08	16,377	3.62-	67.9	0.245
	3,642,859	91.96	13,368	3.68	66.7	0.245
	897,092	97.88	3,009	3.38-	73.4	0.241
Mountain Metropolitan Rural	1,200,638	94.36	4,317	3.62	78.7	0.279
	720,893	92.10	2,768	3.88	72.1	0.277
	479,745	97.98	1,549	3.24-	90.6+	0.284
Montana Metropolitan Rural	97,248	99.90	378	3.89	69.4	0.265
	21,173	99.90	92	4.37	76.3	0.334
	76,075	99.91	286	3.76	67.2	0.245
Idaho Metropolitan Rural	109,822	99.77	430	3.93	83.9	0.309
	18,471	99.90	93	5.08	35.5	0.165
	91,351	99.74	337	3.70	96.6	0.337
Wyoming Metropolitan Rural	42,408	99.91	117	2.76	61.8	0.164
	12,265	99.93	34	2.80	26.4	0.083
	30,143	99.89	83	2.75	79.6	0.195
Colorado Metropolitan Rural	266,663	94.73	1,027	3.86	80.9	0.309
	201,737	95.23	804	4.00	68.9	0.273
	64,926	93.22	223	3.41	122.6	0.416

See notes at end of table.

Table 2. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Mexico	125,371	92.49	367	2.94-	86.7	0.247
Metropolitan	51,612	85.86	177	3.46	74.5	0.257
Rural	73,759	97.76	190	2.57-	98.3	0.240
Arizona	348,748	91.33	1,317	3.83	70.1	0.268
Metropolitan	257,931	89.11	1,044	4.08	70.3	0.287
Rural	90,817	98.31	273	3.08	68.9	0.211
Utah	128,579	99.92	393	3.07-	100.0	0.297
Metropolitan	93,319	99.94	297	3.20	94.2	0.293
Rural	35,260	99.88	96	2.72	117.7	0.307
Nevada	81,799	86.15	288	3.65	83.7	0.297
Metropolitan	64,385	84.73	227	3.66	82.3	0.293
Rural	17,414	91.63	61	3.61	88.7	0.312
Pacific	3,339,313	92.62	12,060	3.62	64.1	0.231-
Metropolitan	2,921,966	91.93	10,600	3.63	65.3	0.237
Rural	417,347	97.77	1,460	3.52	55.6	0.193-
Washington	461,706	92.41	1,735	3.76	60.8	0.226
Metropolitan	346,977	90.86	1,316	3.80	60.9	0.229
Rural	114,729	97.42	419	3.66	60.5	0.216
Oregon	303,778	86.84	1,076	3.54	57.7	0.205
Metropolitan	181,677	80.38	643	3.52	60.8	0.214
Rural	122,101	98.65	433	3.58	52.9	0.191
California	2,477,248	93.71	8,962	3.62	66.5	0.241
Metropolitan	2,330,007	93.36	8,453	3.63	67.1	0.244
Rural	147,241	99.57	509	3.49	54.7	0.187
Alaska	16,348	99.78	66	4.19	0.0	0.000
Metropolitan	5,625	99.75	20	3.76	0.0	0.000
Rural	10,723	99.80	46	4.41	0.0	0.000
Hawaii	80,233	83.64	221	2.79-	44.2	0.125-
Metropolitan	57,680	83.31	168	2.97	29.8-	0.089-
Rural	22,553	84.47	53	2.34-	85.7	0.211

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees	
United States	26,698,924	96.70	100,027	3.75	70.2	0.261	
Northeast	6,276,897	98.04	25,025	3.98+	66.1	0.264	
New England	1,569,313	96.20	6,532	4.15+	61.3-	0.256	
Maine	153,209	99.88	636	4.12	57.5	0.235	
Bangor, ME	16,035	99.87	49	3.04	0.0	0.000	
Lewiston-Auburn, ME	13,464	99.93	70	5.16	69.9	0.364	
Portland, ME	52,846	99.89	208	3.92	47.0	0.186	
New Hampshire	114,752	98.98	489	4.26	77.0	0.339	
Manchester, NH	44,397	97.91	173	3.88	85.6	0.335	
Portsmouth, NH	29,738	99.52	144	4.87	86.7	0.443	
Vermont	62,781	99.82	265	4.19	60.0	0.249	
Burlington, VT	10,422	99.91	43	4.10	21.9	0.094	
Massachusetts	709,478	93.75	2,904	4.07+	64.2	0.262	
Boston, MA	429,794	95.67	1,780	4.10	57.5	0.239	
New Bedford, MA	65,540	98.67	238	3.65	80.2	0.293	
Pittsfield, MA	20,281	91.00	72	3.54	14.1-	0.048-	
Springfield, MA	72,225	92.57	297	4.11	100.0	0.413	
Worcester, MA	71,185	79.42	285	3.97	71.1	0.272	
Rhode Island	132,332	97.59	664	5.01+	66.4	0.340	
Providence, RI	132,332	97.59	664	5.01+	66.4	0.340	
Connecticut	396,761	97.56	1,574	3.98	50.6-	0.202-	
Bridgeport, CT	96,911	96.63	357	3.70	43.0	0.166	
Hartford, CT	157,139	99.16	637	4.07	53.7	0.217	
New Haven, CT	102,964	95.31	423	4.12	55.3	0.223	
New London, CT	27,613	99.70	101	3.69	37.0	0.147	

See notes at end of table.



Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	18,493	3.93+	67.9	0.268
New York	2,143,249	98.98	8,117	3.76	68.4	0.259
Albany, NY	115,122	98.78	452	3.92	64.4	0.241
Binghamton, NY	35,576	99.96	127	3.57	64.2	0.224
Buffalo, NY	134,451	98.66	515	3.87	87.1	0.337
Elmira, NY	13,699	99.94	46	3.36	85.9	0.291
Glens Falls, NY	15,222	99.63	77	5.03	55.7	0.258
Nassau-Suffolk, NY	297,143	99.88	1,105	3.76	57.4	0.217
New York, NY	997,473	99.58	3,677	3.63	67.5	0.251
Niagara Falls, NY	30,841	99.69	113	3.72	97.4	0.338
Orange County, NY	30,488	99.89	122	3.99	59.8	0.228
Poughkeepsie, NY	27,864	98.47	119	4.24	83.1	0.349
Rochester, NY	102,542	98.80	401	3.89	67.3	0.276
Syracuse, NY	75,217	99.92	290	3.87	50.8	0.201
Utica-Rome, NY	46,733	99.90	216	4.65	81.5	0.366
New Jersey	916,155	97.84	3,586	3.94	64.0	0.254
Atlantic City, NJ	46,406	97.93	200	4.28	66.5	0.295
Bergen-Passaic, NJ	171,246	99.45	677	3.97	60.8	0.243
Jersey City, NJ	64,069	99.25	246	3.87	65.2	0.239
Middlesex, NJ	91,009	94.70	315	3.55	68.0	0.235
Monmouth-Ocean, NJ	154,643	99.57	628	4.06	55.6	0.228
Newark, NJ	211,511	99.40	817	3.87	58.1	0.227
Trenton, NJ	38,499	97.14	168	4.41	58.8	0.266
Vineland, NJ	16,382	96.17	55	3.39	86.3	0.314
Pennsylvania	1,648,180	98.75	6,790	4.14+	69.2	0.285
Allentown, PA-NJ	94,668	99.09	375	4.00	66.4	0.261
Altoona, PA	20,692	99.99	79	3.82	188.2+	0.674
Beaver County, PA	27,562	99.95	120	4.45	68.6	0.309
Erie, PA	35,244	99.92	157	4.53	49.5	0.236
Harrisburg, PA	72,929	99.95	332	4.58	65.4	0.293
Johnstown, PA	40,260	99.97	140	3.53	49.4	0.181
Lancaster, PA	48,045	99.93	197	4.07	76.0	0.303
Philadelphia, PA-NJ	569,054	95.81	2,416	4.26+	73.2	0.315
Pittsburgh, PA	323,494	99.06	1,321	4.13	70.0	0.294
Reading, PA	48,476	99.88	168	3.46	59.3	0.205
Scranton, PA	122,888	99.95	504	4.13	61.4	0.254
Sharon, PA	19,009	99.97	83	4.40	91.6	0.376
State College, PA	10,032	99.97	30	3.00	37.5	0.100
Williamsport, PA	16,877	99.98	58	3.43	65.9	0.235
York, PA	48,541	99.96	203	4.19	69.2	0.268

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	6,901,975	96.39	26,751	3.86+	71.5	0.274
East North Central	4,745,430	97.76	18,232	3.85	70.6	0.270
Ohio	1,263,869	99.46	4,886	3.89	73.2	0.287
Akron, OH	75,615	99.90	274	3.65	90.4	0.323
Canton, OH	51,895	99.97	220	4.28	70.3	0.295
Cincinnati, OH-KY-IN	159,407	99.96	651	4.07	70.3	0.293
Cleveland, OH	242,585	99.71	932	3.88	69.5	0.276
Columbus, OH	121,377	99.73	524	4.34	83.2	0.367
Dayton, OH	103,547	99.95	386	3.76	87.9	0.346
Hamilton, OH	26,009	99.95	100	3.86	54.6	0.233
Lima, OH	19,579	99.97	76	3.88	0.0	0.000
Lorain-Elyria, OH	27,340	99.85	98	3.65	53.9	0.192
Mansfield, OH	15,230	99.96	58	3.84	36.7	0.135
Steubenville, OH-WV	21,934	98.57	67	3.11	113.5	0.335
Toledo, OH	70,660	99.95	326	4.61	56.3	0.269
Youngstown, OH	69,319	99.95	245	3.61	88.9	0.318
Indiana	623,062	97.86	2,322	3.73	78.4	0.288
Anderson, IN	17,198	99.83	55	3.21	90.6	0.297
Bloomington, IN	7,913	99.87	28	3.53	67.9	0.251
Elkhart-Goshen, IN	15,647	99.92	63	4.02	33.0	0.125
Evansville, IN-KY	34,434	95.72	118	3.41	73.5	0.258
Fort Wayne, IN	37,565	97.77	148	3.93	58.8	0.237
Gary-Hammond, IN	61,160	97.01	202	3.37	108.4	0.365
Indianapolis, IN	118,407	93.81	436	3.69	81.1	0.297
Kokomo, IN	10,842	99.94	30	2.78	95.5	0.281
Lafayette, IN	11,228	99.92	46	4.08	86.7	0.349
Muncie, IN	13,759	99.91	62	4.52	72.3	0.296
South Bend, IN	33,170	99.93	143	4.30	67.5	0.271
Terre Haute, IN	19,585	99.89	69	3.51	78.8	0.254
Illinois	1,265,011	95.90	4,893	3.86	69.2	0.264
Aurora-Egin, IL	30,946	98.68	112	3.60	38.4	0.127
Bloomington, IL	12,672	99.94	63	4.92	52.9	0.228
Champaign, IL	13,391	99.91	53	3.96	15.7-	0.074-
Chicago, IL	608,135	92.94	2,292	3.78	73.1	0.277
Decatur, IL	15,992	99.97	66	4.11	58.0	0.246
Joliet, IL	28,047	97.18	130	4.66	116.1	0.510
Kankakee, IL	12,020	99.94	50	4.17	41.9	0.166
Lake County, IL	36,099	96.52	124	3.47	30.3-	0.114-
Peoria, IL	43,549	99.93	177	4.05	58.3	0.227
Rockford, IL	28,351	88.93	115	4.06	98.0	0.385
Springfield, IL	24,799	99.96	105	4.20	62.1	0.279

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	3,732	3.82	73.3	0.275
Ann Arbor, MI	17,760	95.12	57	3.21	88.4	0.279
Battle Creek, MI	16,831	99.89	63	3.74	78.0	0.296
Benton Harbor, MI	21,618	99.88	81	3.76	71.3	0.280
Detroit, MI	448,826	96.43	1,707	3.84	74.6	0.281
Flint, MI	43,084	91.01	175	4.08	59.3	0.236
Grand Rapids, MI	64,091	95.42	233	3.62	65.8	0.229
Jackson, MI	17,046	99.82	84	4.95	84.8	0.416
Kalamazoo, MI	21,512	99.85	104	4.83	90.6	0.420
Lansing, MI	32,460	90.23	111	3.41	63.0	0.213
Muskegon, MI	18,957	98.06	71	3.78	136.7	0.488
Saginaw, MI	42,162	96.18	135	3.23	89.9	0.292
Wisconsin	611,044	99.60	2,399	3.89	57.3-	0.225
Appleton, WI	34,483	99.96	152	4.37	42.7	0.197
Eau Claire, WI	16,955	99.94	64	3.74	29.6	0.112
Green Bay, WI	19,185	99.97	69	3.58	71.5	0.258
Janesville, WI	16,529	99.85	58	3.47	69.3	0.234
Kenosha, WI	14,291	99.91	52	3.64	73.4	0.278
LaCrosse, WI	11,858	99.91	58	4.83	17.1-	0.081
Madison, WI	30,776	99.74	116	3.74	41.9	0.158
Milwaukee, WI	166,813	99.21	699	4.16	58.4	0.247
Racine, WI	20,503	99.90	88	4.29	58.5	0.241
Sheboygan, WI	14,461	99.98	50	3.43	72.6	0.269
Wausau, WI	12,945	99.95	50	3.85	149.6	0.531
West North Central	2,156,545	93.50	8,519	3.88	73.3	0.282
Minnesota	397,258	77.30	1,439	3.55	80.2	0.280
Duluth, MN-WI	29,977	76.74	104	3.46	85.5	0.295
Minneapolis, MN-WI	141,769	64.45	528	3.66	92.1	0.330
Rochester, MN	9,393	99.67	39	4.07	0.0	0.000
St. Cloud, MN	12,248	70.92	57	4.56	119.3	0.521
Iowa	404,057	99.37	1,786	4.35+	52.0-	0.222
Cedar Rapids, IA	19,323	99.94	95	4.88	52.0	0.252
Davenport, IA-IL	44,646	99.94	213	4.76	46.1	0.199
Des Moines, IA	40,067	94.50	173	4.29	47.5	0.195
Dubuque, IA	11,460	99.95	51	4.41	38.0	0.171
Iowa City, IA	6,240	99.90	39	6.16	0.0	0.000
Sioux City, IA-NE	15,951	99.96	80	4.93	85.7	0.413
Waterloo, IA	19,521	99.96	91	4.63	55.8	0.250

See notes at end of table.



Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	
Missouri	655,875	98.17	2,509	3.93	83.5	0.327+	
Columbia, MO	8,560	99.98	27	3.13	64.7	0.227	
Joplin, MO	19,275	99.95	76	3.92	56.1	0.206	
Kansas City, MO-KS	154,919	95.72	653	4.18	90.8	0.385	
St. Joseph, MO	13,630	99.97	63	4.56	82.1	0.352	
St. Louis, MO-IL	283,167	97.43	1,268	4.44+	74.0	0.327	
Springfield, MO	27,676	99.94	98	3.51	72.9	0.247	
North Dakota	85,433	98.28	315	3.62	71.3	0.251	
Bismarck, ND	8,160	95.13	28	3.39	70.4	0.239	
Fargo, ND-MN	14,138	96.57	62	4.30	90.1	0.393	
Grand Forks, ND	5,687	99.95	17	2.93	64.9	0.164	
South Dakota	96,216	99.59	369	3.76	84.9	0.317	
Rapid City, SD	7,152	99.89	35	4.90	28.6	0.139	
Sioux Falls, SD	13,275	99.93	57	4.26	50.3	0.216	
Nebraska	209,910	98.52	851	3.97	74.7	0.304	
Lincoln, NE	20,994	98.50	82	3.84	70.7	0.272	
Omaha, NE-IA	57,609	95.39	242	4.18	75.8	0.322	
Kansas	307,796	95.82	1,150	3.67	69.7	0.248	
Lawrence, KS	4,965	87.78	17	3.37	0.0	0.000	
Topeka, KS	18,983	97.26	74	3.82	26.7	0.099	
Wichita, KS	45,844	88.57	127	2.75-	47.2	0.128-	
South	8,980,101	97.94	31,874	3.55-	73.5	0.259	
South Atlantic	4,668,855	96.31	17,066	3.67	69.3	0.253	
Delaware	70,251	99.94	287	4.15	80.5	0.355	
Wilmington, DE-NJ-MD	58,114	99.65	232	4.05	78.3	0.321	
Maryland	436,606	99.49	1,777	4.11	76.7	0.313	
Baltimore, MD	244,878	99.90	1,078	4.45+	84.1	0.375+	
Cumberland, MD-WV	17,051	99.95	72	4.24	26.4	0.119	
Hagerstown, MD	14,522	99.95	56	3.88	40.9	0.139	
District of Col.	66,196	99.75	230	3.44	78.5	0.260	
Washington, DC-MD-VA	261,121	99.05	911	3.53	66.4	0.231	

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,894	3.38-	67.3	0.227
Charlottesville, VA	12,020	99.92	30	2.49	61.2	0.165
Danville, VA	15,532	99.99	44	2.86	22.5	0.066-
Lynchburg, VA	18,110	99.99	68	3.75	60.4	0.220
Norfolk, VA	102,601	99.96	395	3.93	58.7	0.228
Richmond, VA	85,698	99.98	325	3.83	70.9	0.265
Roanoke, VA	30,622	99.98	98	3.18	106.9	0.352
West Virginia	244,259	98.98	874	3.58	71.4	0.249
Charleston, WV	34,215	99.96	153	4.51	62.0	0.271
Huntington, WV-KY-OH	40,891	99.95	117	2.86	84.3	0.267
Parkersburg, WV-OH	19,888	99.94	95	4.76	63.1	0.296
Wheeling, WV-OH	22,016	82.51	74	3.37	81.0	0.274
North Carolina	689,138	99.93	2,050	3.01-	59.9	0.176-
Asheville, NC	24,469	99.92	71	2.89	43.4	0.120
Burlington, NC	14,505	99.99	54	3.78	78.1	0.291
Charlotte, NC	109,337	99.79	352	3.26	64.3	0.212
Fayetteville, NC	13,388	99.98	40	3.08	26.0	0.082
Greensboro, NC	99,387	99.97	327	3.32	80.9	0.260
Hickory, NC	23,392	99.97	67	2.92	49.9	0.137
Jacksonville, NC	5,134	99.86	11	2.22	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	190	3.39	67.9	0.219
Wilmington, NC	12,634	99.97	37	3.00	0.0	0.000
South Carolina	329,020	99.44	1,114	3.45	69.7	0.235
Anderson, SC	16,583	99.70	57	3.48	71.5	0.255
Charleston, SC	34,246	98.90	128	3.82	83.6	0.315
Columbia, SC	35,361	99.98	128	3.70	87.0	0.302
Florence, SC	11,195	99.96	40	3.67	28.0	0.097
Greenville, SC	65,893	98.01	233	3.59	39.1	0.144-
Georgia	561,716	99.71	1,797	3.23-	81.8	0.258
Albany, GA	9,292	99.92	30	3.29	66.4	0.228
Athens, GA	13,510	99.96	40	2.97	77.4	0.227
Atlanta, GA	189,539	99.27	624	3.33	75.8	0.252
Augusta, GA-SC	32,938	99.93	114	3.53	138.1	0.452
Columbus, GA-AL	22,847	99.96	54	2.41-	97.8	0.233
Macon, GA	25,929	99.97	97	3.80	78.5	0.287
Savannah, GA	25,338	99.94	96	3.84	63.1	0.248

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Florida	1,705,534	90.97	7,043	4.12+	56.5	0.274
Bradenton, FL	42,906	99.68	178	4.09	92.4	0.378
Daytona Beach, FL	62,616	92.60	250	3.98	81.8	0.331
Fort Lauderdale, FL	181,839	81.09	799	4.29	68.7	0.297
Fort Myers, FL	61,428	99.65	279	4.61	65.6	0.306
Fort Pierce, FL	41,198	99.28	181	4.48	88.4	0.384
FT. Walton Beach, FL	10,169	99.88	49	5.01	131.6	0.659
Gainesville, FL	16,758	99.58	61	3.66	90.8	0.303
Jacksonville, FL	80,895	98.22	307	3.84	82.3	0.306
Lakeland, FL	55,495	99.56	172	3.12	61.8	0.184
Melbourne, FL	46,501	99.72	204	4.50	72.5	0.325
Miami-Hialeah, FL	168,502	79.57	661	3.81	68.3	0.263
Naples, FL	23,433	99.75	100	4.34	104.8	0.449
Ocala, FL	31,367	99.50	114	3.74	48.2	0.172
Orlando, FL	90,604	98.55	356	3.97	60.2	0.237
Panama City, FL	11,817	99.70	41	3.55	93.3	0.363
Pensacola, FL	29,972	99.89	115	3.91	54.5	0.212
Sarasota, FL	77,895	99.81	365	4.64	56.2	0.262
Tallahassee, FL	17,414	97.85	47	2.71	156.2	0.407
Tampa, FL	323,951	87.05	1,441	4.40+	54.9	0.245
West Palm Beach, FL	139,729	85.22	570	4.04	55.9	0.231
East South Central	1,726,272	99.80	5,767	3.33-	79.8+	0.261
Kentucky	422,657	99.70	1,450	3.42	90.0+	0.302
Lexington, KY	31,008	98.87	102	3.29	59.9	0.193
Louisville, KY-IN	107,485	99.20	478	4.45	80.3	0.367
Owensboro, KY	10,319	99.96	35	3.40	127.6	0.395
Tennessee	550,327	99.65	1,907	3.47	73.9	0.255
Chattanooga, TN-GA	50,061	99.97	181	3.63	97.8	0.366
Clarksville, TN-KY	12,541	99.91	52	4.13	58.7	0.235
Jackson, TN	10,064	99.95	49	4.79	93.3	0.478
Johnson City, TN-VA	55,068	99.97	169	3.09	91.2	0.298
Knoxville, TN	70,970	99.96	240	3.40	79.8	0.260
Memphis, TN-AR-MS	88,836	98.06	335	3.77	70.2	0.257
Nashville, TN	92,994	99.96	376	4.04	58.3	0.237

See notes at end of table.



Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Alabama	463,131	99.97	1,470	3.18-	76.5	0.237
Anniston, AL	13,124	99.97	41	3.16	73.1	0.240
Birmingham, AL	108,546	99.98	340	3.13	73.6	0.231
Dothan, AL	12,690	99.94	50	3.96	63.4	0.241
Florence, AL	16,687	99.97	45	2.71	44.1	0.122
Gadsden, AL	14,295	99.97	57	4.04	106.6	0.445
Huntsville, AL	17,137	99.96	53	3.14	59.9	0.185
Mobile, AL	50,513	99.96	197	3.94	89.1	0.348
Montgomery, AL	29,832	99.97	96	3.22	75.5	0.237
Tuscaloosa, AL	13,604	99.99	52	3.82	18.7-	0.072-
Mississippi	290,157	99.98	940	3.21-	81.1	0.249
Biloxi-Gulfport, MS	18,079	99.97	50	2.81	130.3	0.346
Jackson, MS	35,305	99.98	111	3.12	79.3	0.248
Pascagoula, MS	8,556	99.88	35	4.20	95.2	0.379
West South Central	2,584,974	99.74	9,041	3.49-	77.5	0.267
Arkansas	321,739	99.96	1,077	3.33-	59.0	0.194-
Fayetteville, AR	11,803	99.95	57	4.81	33.9	0.166
Fort Smith, AR-OK	21,413	99.98	67	3.12	45.9	0.140
Little Rock, AR	50,966	99.99	196	3.85	72.5	0.275
Pine Bluff, AR	11,012	99.98	31	2.78	0.0	0.000
Louisiana	415,968	99.98	1,451	3.48	86.0	0.286
Alexandria, LA	13,819	99.96	53	3.82	21.9	0.070-
Baton Rouge, LA	39,583	99.97	158	4.04	46.9	0.181
Houma-Thibodaux, LA	13,501	100.00	40	3.03	53.4	0.158
Lafayette, LA	14,620	99.99	39	2.68	27.4	0.069-
Lake Charles, LA	16,436	99.98	69	4.26	84.2	0.381
Monroe, LA	14,648	99.99	34	2.30	127.6	0.264
New Orleans, LA	118,708	99.98	449	3.79	80.8	0.298
Shreveport, LA	36,822	99.98	133	3.58	145.7	0.498
Oklahoma	378,716	99.02	1,362	3.56	81.0	0.284
Enid, OK	8,215	99.94	25	2.99	76.4	0.231
Lawton, OK	8,221	99.99	24	2.96	0.0	0.000
Oklahoma City, OK	88,646	97.45	348	3.90	66.8	0.265
Tulsa, OK	71,032	98.13	254	3.57	77.8	0.267

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	5,151	3.50-	78.0	0.275
Abilene, TX	13,100	99.96	30	2.27	92.4	0.223
Amarillo, TX	19,063	99.97	52	2.73	71.4	0.213
Austin, TX	47,578	99.95	182	3.82	112.6	0.439
Beaumont, TX	42,323	99.98	161	3.81	40.6	0.167
Brazoria, TX	12,486	99.78	43	3.52	50.6	0.171
Brownsville, TX	20,169	99.86	61	3.03	68.3	0.197
Bryan, TX	6,955	99.96	29	4.14	64.4	0.281
Corpus Christi, TX	28,417	99.56	84	2.97	86.4	0.252
Dallas, TX	172,118	99.95	656	3.83	82.9	0.319
El Paso, TX	37,292	99.94	84	2.28-	87.4	0.192
Fort Worth, TX	97,947	99.96	330	3.39	67.3	0.229
Galveston, TX	19,376	99.94	58	3.03	65.8	0.214
Houston, TX	187,992	99.85	687	3.69	83.1	0.303
Killeen-Temple, TX	17,182	99.97	68	3.95	82.7	0.347
Laredo, TX	8,421	99.99	21	2.47	135.8	0.339
Longview, TX	20,547	99.98	61	2.94	87.6	0.238
Lubbock, TX	18,957	99.97	69	3.64	98.8	0.374
McAllen, TX	27,402	99.82	81	2.97	105.7	0.291
Midland, TX	7,362	99.96	22	3.03	84.8	0.286
Odessa, TX	9,207	99.99	24	2.66	106.1	0.351
San Angelo, TX	11,213	99.99	44	3.89	90.5	0.351
San Antonio, TX	107,989	99.28	383	3.56	78.9	0.289
Sherman-Denison, TX	14,532	99.59	48	3.27	81.3	0.270
Texarkana, TX-AR	15,315	99.99	49	3.16	38.3	0.126
Tyler, TX	18,223	99.98	78	4.28	122.5	0.499
Victoria, TX	6,871	99.97	32	4.69	94.5	0.443
Waco, TX	23,624	99.99	93	3.90	22.8-	0.082-
Wichita Falls, TX	14,462	99.97	65	4.46	13.9-	0.068-
West	4,539,951	93.08	16,377	3.62-	67.9	0.245
Mountain	1,200,638	94.36	4,317	3.62	78.7	0.279
Montana	97,248	99.90	378	3.89	69.4	0.265
Billings, MT	12,097	99.88	46	3.83	63.5	0.252
Great Falls, MT	9,076	99.91	46	5.09	89.9	0.442
Idaho	109,822	99.77	430	3.93	83.9	0.309
Boise City, ID	18,471	99.90	93	5.08	35.5	0.165
Wyoming	42,408	99.91	117	2.76-	61.8	0.164
Casper, WY	5,379	99.91	19	3.58	50.6	0.191
Cheyenne, WY	6,886	99.96	15	2.19	0.0	0.000

See notes at end of table.

Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Colorado	266,663	94.73	1,027	3.86	80.9	0.309
Boulder-Longmont, CO	15,143	97.96	60	3.94	60.1	0.257
Colorado Springs, CO	24,899	95.03	92	3.75	70.0	0.250
Denver, CO	119,624	94.10	469	3.94	62.2	0.243
Fort Collins, CO	15,089	99.71	69	4.56	87.8	0.391
Greeley, CO	11,610	99.62	40	3.43	81.3	0.252
Pueblo, CO	15,372	94.43	74	4.82	94.5	0.452
New Mexico	125,371	92.49	367	2.94-	86.7	0.247
Albuquerque, NM	33,783	81.01	121	3.62	95.5	0.335
Las Cruces, NM	9,375	99.94	31	3.35	73.3	0.218
Santa Fe, NM	8,454	93.66	25	2.97	0.0	0.000
Arizona	348,748	91.33	1,317	3.83	70.1	0.268
Phoenix, AZ	187,381	86.74	795	4.28	74.7	0.319
Tucson, AZ	70,550	96.06	249	3.55	56.6	0.201
Utah	128,579	99.92	393	3.07-	100.0	0.297
Provo-Orem, UT	16,076	99.93	49	3.06	268.7+	0.691
Salt Lake City, UT	77,243	99.94	248	3.23	65.1	0.210
Nevada	81,799	86.15	288	3.65	83.7	0.297
Las Vegas, NV	45,252	82.98	145	3.34	96.1	0.323
Reno, NV	19,133	89.17	82	4.41	56.1	0.225
Pacific	3,339,313	92.62	12,060	3.62	64.1	0.231-
Washington	461,706	92.41	1,735	3.76	60.8	0.226
Bellingham, WA	13,629	99.51	53	3.86	19.1-	0.071-
Bremerton, WA	15,439	96.59	57	3.71	35.6	0.130
Olympia, WA	14,254	90.98	58	4.07	14.8-	0.070-
Richland, WA	12,559	99.85	36	2.93	29.8	0.084
Seattle, WA	159,828	86.57	614	3.85	64.6	0.249
Spokane, WA	41,237	94.51	146	3.52	61.5	0.213
Tacoma, WA	50,245	97.24	196	3.92	101.9	0.402
Vancouver, WA	17,048	80.32	58	3.42	39.5	0.118
Yakima, WA	22,738	99.74	98	4.29	43.8	0.171
Oregon	303,778	86.84	1,076	3.54	57.7	0.205
Eugene, OR	28,947	88.67	102	3.54	44.0	0.173
Medford, OR	20,326	99.78	70	3.46	14.6-	0.049-
Portland, OR	99,155	72.79	353	3.53	78.7	0.272
Salem, OR	33,249	90.39	118	3.50	49.8	0.172

See notes at end of table.



Table 3. Partial excision of large intestine: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	8,962	3.62	66.5	0.241
Anaheim-Santa Ana, CA	167,171	89.39	615	3.67	66.5	0.244
Bakersfield, CA	44,969	99.76	181	4.07	76.4	0.320
Chico, CA	27,102	99.09	113	4.20	44.7	0.186
Fresno, CA	58,425	99.90	189	3.23	37.0	0.117-
Los Angeles, CA	677,939	91.40	2,445	3.61	69.8	0.257
Merced, CA	13,462	99.86	43	3.24	25.6	0.076-
Modesto, CA	33,619	98.80	121	3.62	89.1	0.330
Oakland, CA	188,258	99.08	654	3.48	63.5	0.223
Oxnard-Ventura, CA	49,488	93.74	175	3.55	43.4	0.163
Redding, CA	17,796	99.73	79	4.52	67.1	0.295
Riverside, CA	203,246	90.92	745	3.68	87.1	0.312
Sacramento, CA	120,273	91.81	433	3.65	62.6	0.222
Salinas, CA	29,131	99.86	92	3.16	77.7	0.239
San Diego, CA	205,402	91.35	744	3.64	56.8	0.210
San Francisco, CA	163,753	89.02	620	3.75	58.9	0.223
San Jose, CA	105,258	99.50	400	3.82	55.2	0.211
Santa Barbara, CA	38,021	99.70	158	4.12	104.2	0.432
Santa Cruz, CA	24,640	99.77	103	4.10	48.5	0.190
Santa Rosa, CA	44,775	99.49	152	3.37	90.2	0.284
Stockton, CA	40,855	91.54	162	3.96	37.4	0.142
Vallejo, CA	35,778	98.59	110	3.09	109.0	0.333
Visalia, CA	28,811	99.91	73	2.53-	89.9	0.239
Yuba City, CA	11,835	99.35	46	3.93	95.5	0.345
Alaska	16,348	99.78	66	4.19	0.0	0.000
Anchorage, AK	5,625	99.75	20	3.76	0.0	0.000
Hawaii	80,233	83.64	221	2.79-	44.2	0.125-
Honolulu, HI	57,680	83.31	168	2.97	29.8-	0.089-

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
 SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



# Cholecystectomy

In 1986, there were 166,714 discharges for diseases of the gallbladder (Volume 1) and 131,134 partial or total cholecystectomies performed on aged Medicare enrollees. The hospital discharge rate for cholecystectomy was 4.91 discharges per 1,000 enrollees. The 30-day post-admission death rate was 35.0 deaths per 1,000 discharges, or more than 3 percent (Table 1).

## Age and sex patterns

The overall discharge rate for women with cholecystectomies was 6 percent greater than that for men (5.03 discharges per 1,000 enrollees versus 4.73). This difference was less than that found for the rate of hospitalization for diseases of the gallbladder (Volume 1). There was a 26-percent increase in the rate for cholecystectomies among men between the age groups 65–74 years and 75–84 years and a slight decrease for women between these age groups. The rate declined for both sexes for persons 85 years of age or over.

## Patterns by race

The discharge rate of cholecystectomy for white persons (5.07 discharges per 1,000 enrollees) was 66 percent greater than that for black persons (3.05 discharges per 1,000 enrollees). For all age-sex groups, the rate of operation was also substantially higher for white persons. Conversely, the 30-day

post-admission mortality rate per 1,000 discharges was higher for black persons than for white persons for all age and sex groups. These findings suggest that black persons who have cholecystectomies performed may be sicker than white persons having this procedure.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

The highest discharge rates per 1,000 enrollees were in the States in the Central and Appalachian areas (Figure 1). The lowest rates were generally located on the east and west coasts. The range in the rate of discharges for cholecystectomies by State was from a high of 6.72 per 1,000 Medicare enrollees in Utah to a low of 3.71 in New York and of 1.71 in the District of Columbia.

The distribution in the rate of cholecystectomies for MSAs and rural areas across the U.S. census divisions is shown in the boxplots in Figure 2. Of the nine census divisions, the New England, the Middle

Atlantic, and the Pacific Divisions had the lowest median discharge rates. The divisions with the highest median rates were the East South Central, West South Central, and Mountain.

A Pearson correlation coefficient was computed between the discharge rates per 1,000 enrollees and the 30-day post-admission death rates per 1,000 discharges using the MSA and rural area rates. The correlation was not statistically significant.

## Urban-rural patterns

In the United States as a whole and in each census region, the discharge rate for cholecystectomy was higher for rural areas than for urban areas. Nationally, 30-day post-admission death rates per 1,000 discharges were virtually identical for urban (35.0 per 1,000 discharges) and rural (34.9 per 1,000 discharges) areas. Three low-volume areas (two urban and one rural) had statistically significantly lower 30-day post-admission mortality rates. No area had statistically significant higher rates.



Table 1. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

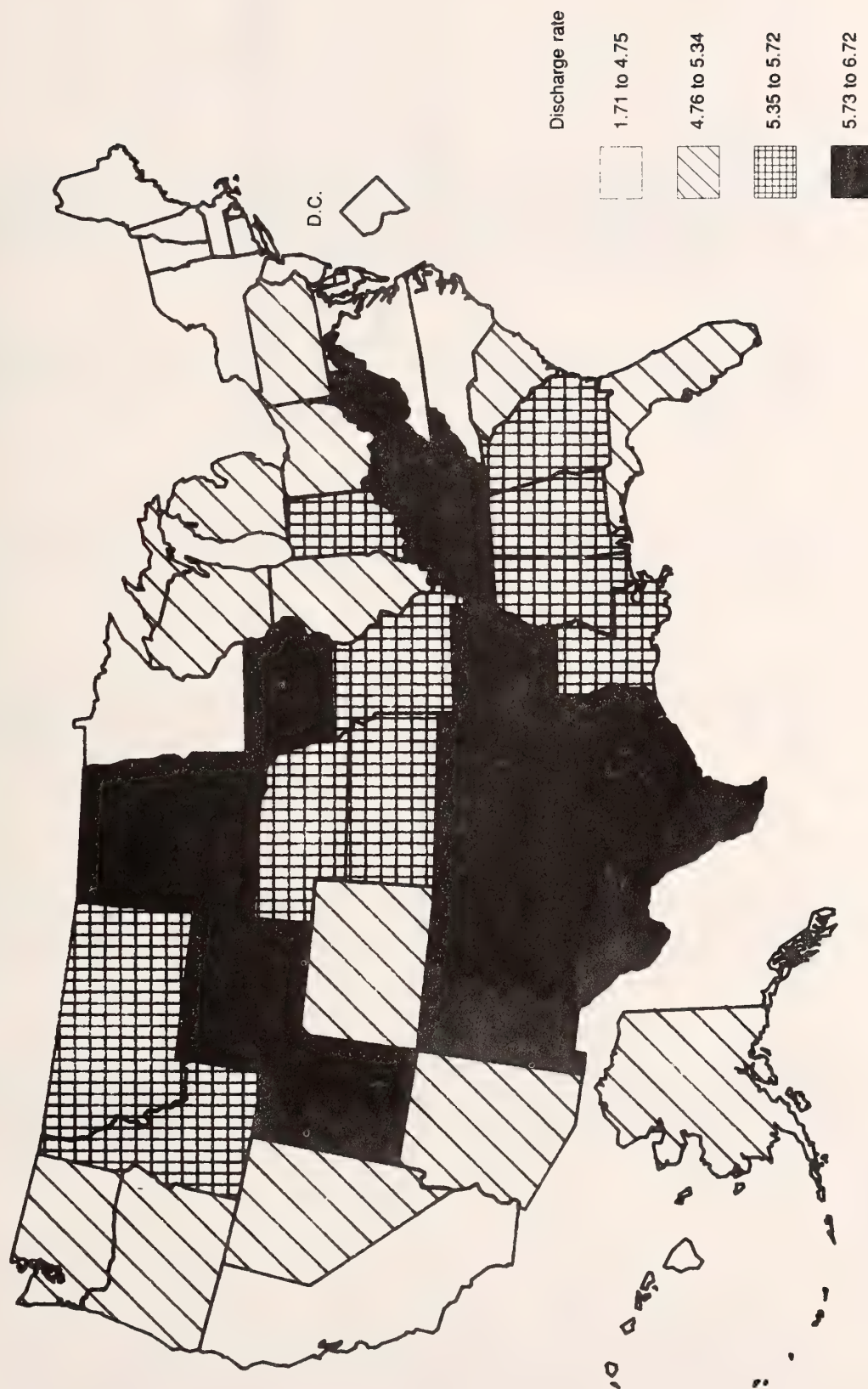
Age, sex, and race	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
All persons (1)	26,698,924	96.70	131,134	4.91	35.0	0.171
65-74 years	16,162,594	96.33	78,417	4.85	19.8	0.095
75-84 years	8,020,447	96.96	42,211	5.26	48.4	0.254
85 years or over	2,515,883	98.32	10,506	4.18	94.8	0.395
Men	10,650,991	96.01	50,369	4.73	42.8	0.202
65-74 years	7,056,445	95.90	30,985	4.39	26.7	0.117
75-84 years	2,912,366	96.02	16,357	5.62	59.9	0.336
85 years or over	582,180	97.22	3,027	4.44	114.6	0.508
Women	16,047,933	97.16	80,765	5.03	30.1	0.151
65-74 years	9,106,149	96.56	47,432	5.21	15.2	0.079
75-84 years	5,108,081	97.51	25,854	5.06	41.1	0.207
85 years or over	1,833,703	98.74	7,479	4.08	86.8	0.353
White	23,574,066	96.62	119,555	5.07	34.5	0.174
65-74 years	14,207,064	96.23	71,360	5.02	19.2	0.096
75-84 years	7,134,499	96.88	38,562	5.41	47.8	0.258
85 years or over	2,232,503	98.26	9,633	4.31	94.2	0.406
Men	9,391,016	95.94	46,327	4.93	42.2	0.208
65-74 years	6,216,472	95.83	28,517	4.59	26.3	0.120
75-84 years	2,573,989	95.94	15,005	5.83	59.0	0.344
85 years or over	600,555	97.12	2,805	4.67	114.1	0.532
Women	14,183,050	97.07	73,228	5.16	29.6	0.152
65-74 years	7,990,592	96.55	42,843	5.36	14.6	0.078
75-84 years	4,560,510	97.42	23,557	5.17	40.7	0.210
85 years or over	1,631,948	98.69	6,828	4.18	86.0	0.359
Black	1,991,943	97.86	6,069	3.05	45.3	0.138
65-74 years	1,213,014	97.54	3,478	2.87	28.8	0.082
75-84 years	583,429	98.11	2,040	3.50	58.8	0.205
85 years or over	195,500	99.11	551	2.82	99.8	0.281
Men	792,788	97.49	1,775	2.24	63.7	0.142
65-74 years	519,305	97.28	990	1.91	41.4	0.078
75-84 years	215,401	97.67	658	3.05	82.1	0.250
85 years or over	58,082	98.74	127	2.19	141.7	0.309
Women	1,199,155	98.10	4,294	3.58	37.7	0.135
65-74 years	693,709	97.74	2,488	3.59	23.7	0.085
75-84 years	368,028	98.37	1,382	3.76	47.8	0.179
85 years or over	137,418	99.26	424	3.09	87.3	0.269

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

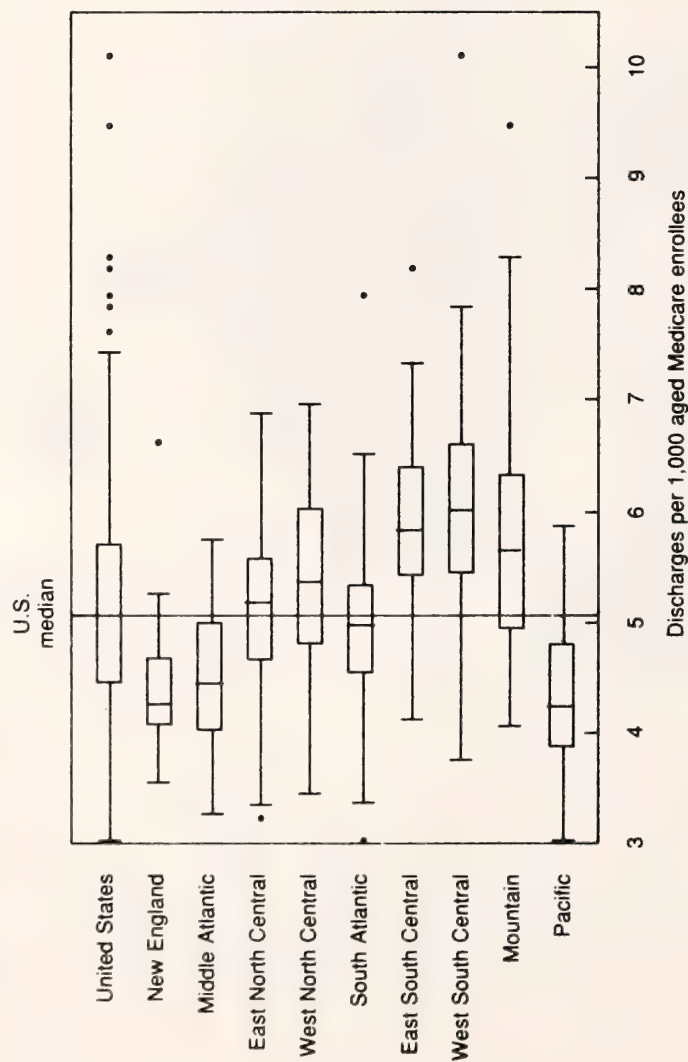
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 1. Cholecystectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Cholecystectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



### Outliers for discharges per 1,000 enrollees

Area	Rural or metropolitan statistical area	Rate
United States	Corpus Christi, TX	7.62
	Lubbock, TX	7.84
	Parkersburg, WV-OH	7.94
	Pascagoula, MS	8.19
	Santa Fe, NM	8.13
New England	Provo-Orem, UT	9.49
	Laredo, TX	10.10
	Providence, RI	5.62
	Kenosha, WI	3.22
	Washington, DC-MD-VA	3.01
South Atlantic	Parkersburg, WV-OH	7.94
	Pascagoula, MS	8.19
West South Central	Laredo, TX	10.10
	Provo-Orem, UT	9.49

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.



Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
United States	26,698,924	96.70	131,134	4.91	35.0	0.171
Metropolitan	19,363,284	95.80	89,288	4.61-	35.0	0.162
Rural	7,335,640	99.16	41,846	5.70+	34.9	0.197+
Northeast	6,276,897	98.04	26,586	4.24-	32.2	0.137-
Metropolitan	5,564,648	97.84	22,919	4.12-	32.1	0.133-
Rural	712,249	99.69	3,667	5.15	32.6	0.168
New England	1,569,313	96.20	6,807	4.34-	31.3	0.139-
Metropolitan	1,342,886	95.66	5,727	4.27-	32.0	0.141-
Rural	226,427	99.53	1,080	4.77	27.2	0.130
Maine	153,209	99.88	720	4.70	34.9	0.159
Metropolitan	82,345	99.89	348	4.23	48.8	0.191
Rural	70,864	99.87	372	5.26	23.1	0.123
New Hampshire	114,752	98.98	518	4.52	23.0	0.104
Metropolitan	74,135	98.55	336	4.54	23.3	0.107
Rural	40,617	99.77	182	4.48	22.5	0.098
Vermont	62,781	99.82	294	4.69	42.1	0.203
Metropolitan	10,422	99.91	37	3.55	48.3	0.190
Rural	52,359	99.80	257	4.92	41.2	0.206
Massachusetts	709,478	93.75	2,894	4.09-	31.4	0.130-
Metropolitan	659,025	93.40	2,679	4.07-	31.6	0.132-
Rural	50,453	98.58	215	4.26	29.1	0.118
Rhode Island	132,332	97.59	743	5.62	42.5	0.249
Metropolitan	132,332	97.59	743	5.62	42.5	0.249
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	1,638	4.13-	25.1	0.109-
Metropolitan	384,627	97.50	1,584	4.12-	26.0	0.112-
Rural	12,134	99.66	54	4.46	0.0	0.000
Middle Atlantic	4,707,584	98.68	19,779	4.20-	32.5	0.137-
Metropolitan	4,221,762	98.55	17,192	4.07-	32.1	0.131-
Rural	485,822	99.76	2,587	5.32+	34.9	0.187
New York	2,143,249	98.98	7,954	3.71-	34.3	0.128-
Metropolitan	1,922,371	98.89	6,879	3.58-	34.9	0.126-
Rural	220,878	99.75	1,075	4.87	30.1	0.146

See notes at end of table.

Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	3,796	4.14-	31.3	0.132-
Metropolitan	916,155	97.84	3,796	4.14-	31.3	0.132-
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	8,029	4.87	31.2	0.151
Metropolitan	1,383,236	98.56	6,517	4.71	29.5	0.138-
Rural	264,944	99.78	1,512	5.70+	38.4	0.221
North Central	6,901,975	96.39	35,907	5.20+	36.3	0.187+
Metropolitan	4,398,761	95.22	21,596	4.91	37.2	0.181
Rural	2,503,214	98.51	14,311	5.72+	35.0	0.197+
East North Central	4,745,430	97.76	24,106	5.08+	37.1	0.186
Metropolitan	3,453,558	97.13	16,783	4.86	37.1	0.179
Rural	1,291,872	99.47	7,323	5.67+	37.2	0.205+
Ohio	1,263,869	99.46	6,510	5.15	32.5	0.165
Metropolitan	987,528	99.60	4,932	5.00	34.2	0.172
Rural	276,341	98.95	1,578	5.71+	27.1	0.147
Indiana	623,062	97.86	3,358	5.39+	43.8	0.233+
Metropolitan	399,457	97.01	2,067	5.17	42.8	0.223
Rural	223,605	99.41	1,291	5.77+	45.3	0.252
Illinois	1,265,011	95.90	6,298	4.98	41.5	0.207+
Metropolitan	952,934	94.73	4,521	4.74	42.0	0.200
Rural	312,077	99.68	1,777	5.69+	40.4	0.228
Michigan	982,444	96.86	4,718	4.80	34.5	0.160
Metropolitan	744,347	96.06	3,367	4.52-	34.5	0.150
Rural	238,097	99.44	1,351	5.67+	34.7	0.190
Wisconsin	611,044	99.60	3,222	5.27	34.5	0.181
Metropolitan	369,292	99.43	1,896	5.13	31.2	0.159
Rural	241,752	99.86	1,326	5.49	39.2	0.214
West North Central	2,156,545	93.50	11,801	5.48+	34.7	0.188
Metropolitan	945,203	88.82	4,813	5.10	37.5	0.190
Rural	1,211,342	97.51	6,988	5.77+	32.8	0.188
Minnesota	397,258	77.30	1,880	4.75	39.8	0.191
Metropolitan	187,915	67.07	768	4.11-	49.7	0.205
Rural	209,343	89.55	1,112	5.32	33.2	0.179

See notes at end of table.

Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Iowa						
Metropolitan	404,057	99.37	2,371	5.88+	31.7	0.184
Rural	136,818	98.24	753	5.51	36.7	0.199
	267,239	99.96	1,618	6.06+	29.5	0.177
Missouri						
Metropolitan	655,875	98.17	3,571	5.44+	34.8	0.187
Rural	383,255	96.99	2,054	5.35	36.9	0.196
	272,620	99.88	1,517	5.56+	31.9	0.174
North Dakota						
Metropolitan	85,433	98.28	524	6.13+	26.3	0.152
Rural	22,964	98.14	135	5.89	22.8	0.124
	62,469	98.34	389	6.22+	27.5	0.164
South Dakota						
Metropolitan	96,216	99.59	573	5.97+	24.4	0.144
Rural	20,427	99.92	127	6.23	8.6-	0.047
	75,789	99.51	446	5.90	28.1	0.169
Nebraska						
Metropolitan	209,910	98.52	1,200	5.72+	33.8	0.194
Rural	70,076	95.86	332	4.74	29.9	0.138
	139,834	99.91	868	6.21+	35.2	0.221
Kansas						
Metropolitan	307,796	95.82	1,682	5.47+	39.4	0.214
Rural	123,748	93.24	644	5.21	37.1	0.206
	184,048	97.63	1,038	5.64+	41.0	0.220
South						
Metropolitan	8,980,101	97.94	48,298	5.37+	34.9	0.186+
Rural	5,757,016	96.87	29,452	5.11+	34.8	0.176
	3,223,085	99.91	18,846	5.84+	35.1	0.202+
South Atlantic						
Metropolitan	4,668,855	96.31	22,456	4.80	32.9	0.158
Rural	3,313,125	94.94	15,438	4.65-	32.5	0.150-
	1,355,730	99.84	7,018	5.17+	33.8	0.175
Delaware						
Metropolitan	70,251	99.94	375	5.35	26.6	0.133
Rural	44,355	99.95	229	5.17	28.9	0.141
	25,896	99.94	146	5.65	23.0	0.120
Maryland						
Metropolitan	436,606	99.49	1,858	4.26-	30.1	0.129
Rural	395,091	99.44	1,656	4.20-	31.3	0.133
	41,515	99.95	202	4.87	20.0	0.096
District of Col.						
Metropolitan	66,196	99.75	113	1.71-	36.3	0.058-
Rural	66,196	99.75	113	1.71-	36.3	0.058-
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.



Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	2,500	4.42-	34.0	0.151
Metropolitan	355,193	99.87	1,452	4.09-	36.8	0.149
Rural	210,942	99.97	1,048	4.97	30.3	0.153
West Virginia	244,259	98.98	1,536	6.28+	36.9	0.230
Metropolitan	90,704	97.39	535	5.89	39.1	0.223
Rural	153,555	99.95	1,001	6.51+	35.9	0.233
North Carolina	689,138	99.93	3,148	4.56-	35.5	0.162
Metropolitan	346,905	99.89	1,563	4.50	33.0	0.150
Rural	342,233	99.96	1,585	4.63	38.1	0.174
South Carolina	329,020	99.44	1,731	5.26	34.5	0.181
Metropolitan	186,873	99.05	1,058	5.65+	36.5	0.206
Rural	142,147	99.95	673	4.73	31.3	0.148
Georgia	561,716	99.71	3,017	5.36+	34.3	0.179
Metropolitan	313,319	99.54	1,636	5.22	34.5	0.173
Rural	248,397	99.93	1,381	5.55+	34.0	0.186
Florida	1,705,534	90.97	8,178	4.78	31.0	0.149
Metropolitan	1,514,489	90.04	7,196	4.73	30.5	0.145
Rural	191,045	99.17	982	5.14	34.8	0.183
East South Central	1,726,272	99.80	10,227	5.91+	37.0	0.211+
Metropolitan	873,594	99.64	4,918	5.62+	37.5	0.206
Rural	852,678	99.97	5,309	6.21+	36.5	0.217+
Kentucky	422,657	99.70	2,612	6.17+	41.6	0.246+
Metropolitan	183,264	99.37	1,014	5.53	39.7	0.209
Rural	239,393	99.96	1,598	6.66+	42.7	0.274+
Tennessee	550,327	99.65	3,341	6.06+	37.6	0.224+
Metropolitan	342,007	99.46	1,953	5.70+	39.7	0.224
Rural	208,320	99.96	1,388	6.64+	34.7	0.225
Alabama	463,131	99.97	2,649	5.71+	31.8	0.175
Metropolitan	281,960	99.97	1,605	5.68+	33.7	0.188
Rural	181,171	99.97	1,044	5.75+	28.8	0.158
Mississippi	290,157	99.98	1,625	5.59+	36.5	0.193
Metropolitan	66,363	99.96	346	5.21	36.1	0.182
Rural	223,794	99.98	1,279	5.70+	36.7	0.196

See notes at end of table.

Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central	2,584,974	99.74	15,615	6.04+	36.5	0.218+
Metropolitan	1,570,297	99.59	9,096	5.79+	37.3	0.215+
Rural	1,014,677	99.97	6,519	6.41+	35.4	0.223+
Arkansas	321,739	99.96	2,128	6.60+	37.3	0.238
Metropolitan	100,966	99.98	658	6.51+	41.6	0.265
Rural	220,773	99.95	1,470	6.64+	35.3	0.226
Louisiana	415,968	99.98	2,366	5.69+	38.6	0.204
Metropolitan	268,137	99.98	1,447	5.40	41.5	0.207
Rural	147,831	99.99	919	6.22+	34.3	0.199
Oklahoma	378,716	99.02	2,478	6.53+	30.3	0.194
Metropolitan	180,038	98.00	1,122	6.23+	29.9	0.181
Rural	198,678	99.96	1,356	6.81+	30.7	0.206
Texas	1,468,551	99.81	8,643	5.88+	37.5	0.225+
Metropolitan	1,021,156	99.73	5,869	5.75+	37.3	0.220+
Rural	447,395	99.97	2,774	6.19+	38.0	0.236+
West	4,539,951	93.08	20,343	4.49-	36.4	0.164
Metropolitan	3,642,859	91.96	15,321	4.21-	36.7	0.155
Rural	897,092	97.88	5,022	5.61+	35.5	0.199
Mountain	1,200,638	94.36	6,704	5.59+	37.2	0.206+
Metropolitan	720,893	92.10	3,779	5.25+	37.3	0.195
Rural	479,745	97.98	2,925	6.10+	37.0	0.221
Montana	97,248	99.90	528	5.44	27.1	0.142
Metropolitan	21,173	99.90	99	4.68	10.7	0.048-
Rural	76,075	99.91	429	5.65	30.8	0.168
Idaho	109,822	99.77	625	5.70	29.7	0.163
Metropolitan	18,471	99.90	111	6.02	19.4	0.110
Rural	91,351	99.74	514	5.63	31.8	0.175
Wyoming	42,408	99.91	261	6.16	61.1	0.375
Metropolitan	12,265	99.93	67	5.47	30.7	0.166
Rural	30,143	99.89	194	6.45	71.2	0.457
Colorado	266,663	94.73	1,421	5.34	36.3	0.197
Metropolitan	201,737	95.23	1,039	5.16	35.8	0.189
Rural	64,926	93.22	382	5.89	37.9	0.224

See notes at end of table.

Table 2. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	828	6.61+	22.7	0.151
Metropolitan	51,612	85.86	279	5.42	17.4	0.099
Rural	73,759	97.76	549	7.44+	25.5	0.187
Arizona	348,748	91.33	1,776	5.09	42.1	0.214
Metropolitan	257,931	89.11	1,235	4.78	42.5	0.203
Rural	90,817	98.31	541	5.97+	41.2	0.247
Utah	128,579	99.92	865	6.72+	42.0	0.266
Metropolitan	93,319	99.94	639	6.84+	45.1	0.293
Rural	35,260	99.88	226	6.39	33.3	0.196
Nevada	81,799	86.15	400	4.91	50.2	0.230
Metropolitan	64,385	84.73	310	4.84	42.1	0.189
Rural	17,414	91.83	90	5.19	77.1	0.375
Pacific	3,339,313	92.62	13,639	4.09-	36.1	0.149-
Metropolitan	2,921,966	91.93	11,542	3.96-	36.6	0.146-
Rural	417,347	97.77	2,097	5.04	33.5	0.172
Washington	461,706	92.41	2,200	4.78	32.0	0.155
Metropolitan	346,977	90.86	1,552	4.48	31.5	0.144
Rural	114,729	97.42	648	5.66	33.3	0.191
Oregon	303,778	86.84	1,509	4.98	34.1	0.175
Metropolitan	181,677	80.38	818	4.51	38.5	0.182
Rural	122,101	98.65	691	5.67	28.6	0.166
California	2,477,248	93.71	9,529	3.85-	37.9	0.146-
Metropolitan	2,330,007	93.36	8,922	3.84-	37.7	0.145-
Rural	147,241	99.57	607	4.13-	39.9	0.166
Alaska	16,348	99.78	81	4.99	39.9	0.201
Metropolitan	5,625	99.75	25	4.47	0.0	0.000
Rural	10,723	99.80	56	5.26	57.0	0.294
Hawaii	80,233	83.64	320	4.00-	20.9	0.088
Metropolitan	57,680	83.31	225	3.92	21.5	0.089
Rural	22,553	84.47	95	4.22	19.5	0.085

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths		
	Number	As percent of all enrollees		Number	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70		131,134	4.91	35.0
Northeast	6,276,897	98.04		26,586	4.24-	32.2
New England	1,569,313	96.20		6,807	4.34-	31.3
Maine	153,209	99.88		720	4.70	34.9
Bangor, ME	16,035	99.87		75	4.68	29.7
Lewiston-Auburn, ME	13,464	99.93		58	4.31	54.7
Portland, ME	52,846	99.89		215	4.07	53.5
New Hampshire	114,752	98.98		518	4.52	23.0
Manchester, NH	44,397	97.91		211	4.76	14.2
Portsmouth, NH	29,738	99.52		125	4.21	37.8
Vermont	62,781	99.82		294	4.69	42.1
Burlington, VT	10,422	99.91		37	3.55	48.3
Massachusetts	709,478	93.75		2,894	4.09-	31.4
Boston, MA	429,794	95.67		1,706	3.98-	30.9
New Bedford, MA	65,540	98.67		254	3.88-	32.4
Pittsfield, MA	20,281	91.00		79	3.90	26.7
Springfield, MA	72,225	92.57		343	4.76	42.8
Worcester, MA	71,185	79.42		297	4.18	22.7
Rhode Island	132,332	97.59		743	5.62	42.5
Providence, RI	132,332	97.59		743	5.62	42.5
Connecticut	396,761	97.56		1,638	4.13-	25.1
Bridgeport, CT	96,911	96.63		368	3.80-	12.8-
Hartford, CT	157,139	99.16		652	4.16-	30.0
New Haven, CT	102,964	95.31		451	4.38	29.2
New London, CT	27,613	99.70		113	4.10	34.2

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Middle Atlantic	4,707,584	98.68	19,779	4.20-	32.5	0.137-
New York	2,143,249	98.98	7,954	3.71-	34.3	0.128-
Albany, NY	115,122	98.78	433	3.76-	40.0	0.146
Binghamton, NY	35,576	99.96	154	4.33	14.4	0.056-
Buffalo, NY	134,451	98.66	497	3.70-	27.7	0.099-
Elmira, NY	13,699	99.94	64	4.68	31.6	0.145
Glens Falls, NY	15,222	99.63	75	4.93	13.6	0.064
Nassau-Suffolk, NY	297,143	99.88	1,106	3.74-	29.7	0.114-
New York, NY	997,473	99.58	3,257	3.26-	43.0	0.144
Niagara Falls, NY	30,841	99.69	136	4.41	47.3	0.203
Orange County, NY	30,488	99.89	119	3.90	32.9	0.130
Poughkeepsie, NY	27,864	98.47	124	4.45	21.6	0.104
Rochester, NY	102,542	88.80	391	3.82-	14.5-	0.057-
Syracuse, NY	75,217	99.92	302	4.02	16.6	0.067-
Utica-Rome, NY	46,733	99.90	221	4.74	24.2	0.107
New Jersey	916,155	97.84	3,796	4.14-	31.3	0.132-
Atlantic City, NJ	46,406	97.93	188	4.05	32.8	0.127
Bergen-Passaic, NJ	171,246	99.45	702	4.10-	38.8	0.160
Jersey City, NJ	64,069	99.25	260	4.05	24.3	0.095
Middlesex, NJ	91,009	94.70	383	4.22	29.1	0.129
Monmouth-Ocean, NJ	154,643	99.57	693	4.46	26.4	0.123
Newark, NJ	211,511	99.40	805	3.81-	29.6	0.119-
Trenton, NJ	38,499	97.14	135	3.51-	15.3	0.052-
Vineland, NJ	16,382	96.17	72	4.39	47.0	0.189
Pennsylvania	1,648,180	98.75	8,029	4.87	31.2	0.151
Allentown, PA-NJ	94,668	99.09	542	5.72	31.7	0.175
Altoona, PA	20,692	99.99	105	5.07	30.7	0.144
Beaver County, PA	27,562	99.95	157	5.69	47.1	0.270
Erie, PA	35,244	99.92	176	5.00	42.9	0.207
Harrisburg, PA	72,929	99.95	367	5.03	23.2	0.111
Johnstown, PA	40,260	99.97	231	5.73	21.3	0.130
Lancaster, PA	48,045	99.93	241	5.02	12.3-	0.060-
Philadelphia, PA-NJ	569,054	95.81	2,353	4.13-	24.1-	0.099-
Pittsburgh, PA	323,494	99.06	1,631	5.03	34.2	0.176
Reading, PA	48,476	99.88	220	4.53	40.3	0.185
Scranton, PA	122,888	99.95	583	4.72	33.9	0.152
Sharon, PA	19,009	99.97	97	5.10	60.3	0.322
State College, PA	10,032	99.97	49	4.88	40.3	0.202
Williamsport, PA	16,877	99.98	65	3.85	15.3	0.059
York, PA	48,541	99.96	221	4.55	41.9	0.186

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	35,907	5.20+	36.3	0.187
East North Central	4,745,430	97.76	24,106	5.08+	37.1	0.186
Ohio	1,263,869	99.46	6,510	5.15	32.5	0.165
Akron, OH	75,615	99.90	392	5.19	34.6	0.174
Canton, OH	51,895	99.97	269	5.19	31.1	0.158
Cincinnati, OH-KY-IN	159,407	99.96	768	4.81	29.3	0.144
Cleveland, OH	242,585	99.71	1,142	4.71	40.2	0.195
Columbus, OH	121,377	99.73	679	5.60	35.0	0.192
Dayton, OH	103,547	99.95	515	4.98	35.1	0.168
Hamilton, OH	26,009	99.95	167	6.42	28.9	0.194
Lima, OH	19,579	99.97	88	4.50	33.1	0.153
Lorain-Elyria, OH	27,340	99.85	130	4.77	7.7-	0.038-
Mansfield, OH	15,230	99.96	61	4.01	19.2	0.067
Steubenville, OH-WV	21,934	98.57	118	5.37	9.2-	0.047-
Toledo, OH	70,660	99.95	298	4.21	29.9	0.128
Youngstown, OH	69,319	99.95	346	5.00	49.3	0.243
Indiana	623,062	97.86	3,358	5.39+	43.8	0.233+
Anderson, IN	17,198	99.83	98	5.67	23.2	0.119
Bloomington, IN	7,913	99.87	36	4.54	29.8	0.125
Elkhart-Goshen, IN	15,647	99.92	75	4.80	0.0	0.000
Evansville, IN-KY	34,434	95.72	179	5.19	41.4	0.230
Fort Wayne, IN	37,565	97.77	196	5.22	54.7	0.289
Gary-Hammond, IN	61,160	97.01	287	4.69	40.6	0.191
Indianapolis, IN	118,407	93.81	601	5.08	39.5	0.203
Kokomo, IN	10,842	99.94	65	5.99	130.2	0.658
Lafayette, IN	11,228	99.92	65	5.80	47.9	0.262
Muncie, IN	13,759	99.91	82	5.95	45.2	0.296
South Bend, IN	33,170	99.93	198	5.96	48.0	0.271
Terre Haute, IN	19,585	99.89	109	5.55	33.6	0.203
Illinois	1,265,011	95.90	6,298	4.98	41.5	0.207
Aurora-Evanston, IL	30,946	98.68	172	5.56	45.8	0.255
Bloomington, IL	12,672	99.94	66	5.21	64.7	0.381
Champaign, IL	13,391	99.91	75	5.62	75.2	0.447
Chicago, IL	608,135	92.94	2,695	4.43-	39.9	0.181
Decatur, IL	15,992	99.97	84	5.26	25.4	0.123
Joliet, IL	28,047	97.18	170	6.06	49.1	0.327
Kankakee, IL	12,020	99.94	55	4.58	22.0	0.083
Lake County, IL	36,099	96.52	183	5.08	16.4	0.086
Peoria, IL	43,549	99.93	239	5.49	43.1	0.227
Rockford, IL	28,351	88.93	137	4.84	41.5	0.210
Springfield, IL	24,799	99.96	146	5.87	57.7	0.319

See notes at end of table.



Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	4,718	4.80	34.5	0.160
Ann Arbor, MI	17,760	95.12	59	3.33	35.9	0.111
Battle Creek, MI	16,831	99.89	97	5.76	23.6	0.118
Benton Harbor, MI	21,618	99.88	96	4.44	55.9	0.280
Detroit, MI	448,826	96.43	2,029	4.52	35.8	0.155
Flint, MI	43,084	91.01	170	3.94	45.3	0.165
Grand Rapids, MI	64,091	95.42	310	4.84	34.4	0.168
Jackson, MI	17,046	99.82	85	4.99	36.2	0.178
Kalamazoo, MI	21,512	99.85	87	4.04	26.4	0.093
Lansing, MI	32,460	90.23	139	4.29	22.2	0.091
Muskegon, MI	18,957	98.06	102	5.38	10.7	0.054
Saginaw, MI	42,162	96.18	193	4.57	26.7	0.121
Wisconsin	611,044	99.60	3,222	5.27	34.5	0.181
Appleton, WI	34,483	99.96	187	5.42	27.3	0.169
Eau Claire, WI	16,955	99.94	84	4.95	11.7	0.056
Green Bay, WI	19,185	99.97	91	4.73	52.0	0.258
Janesville, WI	16,529	99.85	114	6.89	34.6	0.234
Kenosha, WI	14,291	99.91	46	3.22	24.8	0.069
LaCrosse, WI	11,858	99.91	63	5.31	0.0	0.000
Madison, WI	30,776	99.74	142	4.62	6.9-	0.031-
Milwaukee, WI	166,813	99.21	874	5.24	30.1	0.147
Racine, WI	20,503	99.90	87	4.25	60.4	0.241
Sheboygan, WI	14,461	99.98	79	5.46	36.7	0.202
Wausau, WI	12,945	99.95	71	5.49	56.4	0.380
West North Central	2,156,545	93.50	11,801	5.48+	34.7	0.188
Minnesota	397,258	77.30	1,880	4.75	39.8	0.191
Duluth, MN-WI	29,977	76.74	115	3.84	55.5	0.197
Minneapolis, MN-WI	141,769	64.45	579	4.11-	45.7	0.191
Rochester, MN	9,393	99.67	44	4.70	0.0	0.000
St. Cloud, MN	12,248	70.92	59	4.85	107.2	0.597
Iowa	404,057	99.37	2,371	5.88+	31.7	0.184
Cedar Rapids, IA	19,323	99.94	114	5.91	8.6-	0.050
Davenport, IA-IL	44,646	99.94	212	4.75	71.1	0.333
Des Moines, IA	40,067	94.50	228	5.70	62.9	0.367
Dubuque, IA	11,460	99.95	46	4.02	0.0	0.000
Iowa City, IA	6,240	99.90	30	4.82	73.2	0.309
Sioux City, IA-NE	15,951	99.96	76	4.77	0.0	0.000
Waterloo, IA	19,521	99.96	124	6.36	33.8	0.199

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	3,571	5.44+	34.8	0.187
Columbia, MO	8,560	99.98	47	5.50	20.7	0.113
Joplin, MO	19,275	99.95	110	5.69	27.6	0.154
Kansas City, MO-KS	154,919	95.72	799	5.16	33.5	0.176
St. Joseph, MO	13,630	99.97	88	6.45	52.5	0.352
St. Louis, MO-IL	283,167	97.43	1,501	5.29	36.5	0.188
Springfield, MO	27,676	99.94	189	6.82	62.0	0.425
North Dakota	85,433	98.28	524	6.13+	26.3	0.152
Bismarck, ND	8,160	95.13	53	6.50	20.7	0.119
Fargo, ND-MN	14,138	96.57	85	6.03	32.3	0.197
Grand Forks, ND	5,687	99.95	26	4.58	46.1	0.164
South Dakota	96,216	99.59	573	5.97+	24.4	0.144
Rapid City, SD	7,152	99.89	35	4.89	28.2	0.139
Sioux Falls, SD	13,275	99.93	92	6.96	0.0	0.000
Nebraska	209,910	98.52	1,200	5.72+	33.8	0.194
Lincoln, NE	20,994	98.50	101	4.82	19.9	0.091
Omaha, NE-IA	57,609	95.39	289	5.02	30.7	0.153
Kansas	307,796	95.82	1,682	5.47+	39.4	0.214
Lawrence, KS	4,965	87.78	17	3.44	56.0	0.190
Topeka, KS	18,983	97.26	91	4.80	20.1	0.099
Wichita, KS	45,844	88.57	220	4.81	41.3	0.214
South	8,980,101	97.94	48,298	5.37+	34.9	0.186
South Atlantic	4,668,855	96.31	22,456	4.80	32.9	0.158-
Delaware	70,251	99.94	375	5.35	26.6	0.133
Wilmington, DE-NJ-MD	58,114	99.65	305	5.26	36.5	0.179
Maryland	436,606	99.49	1,858	4.26-	30.1	0.129-
Baltimore, MD	244,878	99.90	1,026	4.19-	34.0	0.143
Cumberland, MD-WV	17,051	99.95	95	5.55	11.3	0.059
Hagerstown, MD	14,522	99.95	60	4.13	54.3	0.209
District of Col.	66,196	99.75	113	1.71-	36.3	0.058-
Washington, DC-MD-VA	261,121	99.05	784	3.01-	27.7	0.082-

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	2,500	4.42-	34.0	0.151
Charlottesville, VA	12,020	99.92	43	3.58	19.9	0.083
Danville, VA	15,532	99.99	80	5.14	38.2	0.199
Lynchburg, VA	18,110	99.99	80	4.40	41.0	0.165
Norfolk, VA	102,601	99.96	423	4.13-	52.1	0.206
Richmond, VA	85,698	99.98	396	4.62	23.0	0.109
Roanoke, VA	30,622	99.98	141	4.60	46.0	0.224
West Virginia	244,259	98.98	1,536	6.28+	36.9	0.230
Charleston, WV	34,215	99.96	197	5.75	43.4	0.240
Huntington, WV-KY-OH	40,891	99.95	215	5.25	25.7	0.122
Parkersburg, WV-OH	19,888	99.94	158	7.94+	67.4	0.544
Wheeling, WV-OH	22,016	82.51	128	5.80	22.3	0.137
North Carolina	689,138	99.93	3,148	4.56-	35.5	0.162
Asheville, NC	24,469	99.92	113	4.62	35.3	0.161
Burlington, NC	14,505	99.99	54	3.71	19.6	0.072
Charlotte, NC	109,337	99.79	500	4.56	43.4	0.202
Fayetteville, NC	13,388	99.98	57	4.26	40.9	0.165
Greensboro, NC	99,387	99.97	505	5.07	32.6	0.166
Hickory, NC	23,392	99.97	112	4.78	26.9	0.137
Jacksonville, NC	5,134	99.86	25	4.88	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	213	3.76-	28.0	0.109
Wilmington, NC	12,634	99.97	46	3.65	27.9	0.085
South Carolina	329,020	99.44	1,731	5.26	34.5	0.181
Anderson, SC	16,583	99.70	106	6.37	18.0	0.127
Charleston, SC	34,246	98.90	173	5.05	48.8	0.251
Columbia, SC	35,361	99.98	199	5.63	51.0	0.272
Florence, SC	11,195	99.96	51	4.55	25.9	0.097
Greenville, SC	65,893	98.01	403	6.10+	28.2	0.176
Georgia	561,716	99.71	3,017	5.36+	34.3	0.179
Albany, GA	9,292	99.92	48	5.17	19.8	0.114
Athens, GA	13,510	99.96	71	5.24	0.0	0.000
Atlanta, GA	189,539	99.27	989	5.21	41.3	0.203
Augusta, GA-SC	32,938	99.93	159	4.83	28.4	0.129
Columbus, GA-AL	22,847	99.96	105	4.59	11.7	0.046-
Macon, GA	25,929	99.97	148	5.70	42.6	0.246
Savannah, GA	25,338	99.94	135	5.32	20.5	0.124

See notes at end of table.



Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	8,178	4.78	31.0	0.149-
Bradenton, FL	42,906	99.68	237	5.50	47.9	0.268
Daytona Beach, FL	62,616	92.90	291	4.64	17.7	0.078-
Fort Lauderdale, FL	181,839	81.09	722	3.92-	28.1	0.109-
Fort Myers, FL	61,428	99.65	307	4.99	27.5	0.136
Fort Pierce, FL	41,198	99.28	168	4.07	17.8	0.076
FT. Walton Beach, FL	10,169	99.88	55	5.45	52.7	0.330
Gainesville, FL	16,758	99.58	85	5.08	60.2	0.303
Jacksonville, FL	80,895	98.22	403	4.99	37.7	0.192
Lakeland, FL	55,495	99.56	298	5.36	30.2	0.147
Melbourne, FL	46,501	99.72	235	5.06	37.2	0.186
Miami-Hialeah, FL	168,502	79.57	697	4.13-	25.7	0.107-
Naples, FL	23,433	99.75	79	3.36-	24.3	0.090
Ocala, FL	31,367	99.50	142	4.53	7.9-	0.034-
Orlando, FL	90,604	98.55	489	5.40	27.3	0.147
Panama City, FL	11,817	99.70	61	5.16	0.0	0.000
Pensacola, FL	29,972	99.89	159	5.31	19.8	0.106
Sarasota, FL	77,895	99.81	366	4.68	27.0	0.125
Tallahassee, FL	17,414	97.85	95	5.45	64.2	0.408
Tampa, FL	323,951	87.05	1,708	5.25	33.6	0.180
West Palm Beach, FL	139,729	85.22	599	4.25	30.9	0.133
East South Central	1,726,272	99.80	10,227	5.91+	37.0	0.211+
Kentucky	422,657	99.70	2,612	6.17+	41.6	0.246+
Lexington, KY	31,008	98.87	168	5.42	19.2	0.096
Louisville, KY-IN	107,485	99.20	592	5.50	45.1	0.235
Owensboro, KY	10,319	99.96	64	6.18	38.2	0.197
Tennessee	550,327	99.65	3,341	6.06+	37.6	0.224
Chattanooga, TN-GA	50,061	99.97	330	6.58+	31.1	0.203
Clarksville, TN-KY	12,541	99.91	84	6.69	72.8	0.551
Jackson, TN	10,064	99.95	74	7.35	0.0	0.000
Johnson City, TN-VA	55,068	99.97	275	4.99	40.5	0.205
Knoxville, TN	70,970	99.96	441	6.20+	39.0	0.246
Memphis, TN-AR-MS	88,836	98.06	445	5.01	44.0	0.213
Nashville, TN	92,994	99.96	563	6.04+	41.0	0.237

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	2,649	5.71+	31.8	0.175
Anniston, AL	13,124	99.97	77	5.84	59.6	0.321
Birmingham, AL	108,546	99.98	629	5.78	34.1	0.194
Dothan, AL	12,690	99.94	62	4.88	0.0	0.000
Florence, AL	16,687	99.97	96	5.74	32.2	0.184
Gadsden, AL	14,295	99.97	84	5.85	83.5	0.520
Huntsville, AL	17,137	99.96	80	4.67	24.4	0.123
Mobile, AL	50,513	99.96	324	6.41+	26.8	0.164
Montgomery, AL	29,832	99.97	123	4.12	47.5	0.203
Tuscaloosa, AL	13,604	99.99	84	6.17	12.7	0.073
Mississippi	290,157	99.98	1,625	5.59+	36.5	0.193
Biloxi-Gulfport, MS	18,079	99.97	100	5.54	84.6	0.463
Jackson, MS	35,305	99.98	160	4.53	18.6	0.082
Pascagoula, MS	8,556	99.88	70	8.19	0.0	0.000
West South Central	2,584,974	99.74	15,615	6.04+	36.5	0.218+
Arkansas	321,739	99.96	2,128	6.60+	37.3	0.238
Fayetteville, AR	11,803	99.95	86	7.28	23.2	0.166
Fort Smith, AR-OK	21,413	99.98	142	6.62	50.9	0.327
Little Rock, AR	50,966	99.99	337	6.61+	30.3	0.197
Pine Bluff, AR	11,012	99.98	62	5.63	87.7	0.432
Louisiana	415,968	99.98	2,366	5.69+	38.6	0.204
Alexandria, LA	13,819	99.96	93	6.74	25.9	0.141
Baton Rouge, LA	39,583	99.97	244	6.17	61.7	0.364
Houma-Thibodaux, LA	13,501	100.00	76	5.64	15.2	0.079
Lafayette, LA	14,620	99.99	106	7.26	30.1	0.209
Lake Charles, LA	16,436	99.98	106	6.45	52.1	0.318
Monroe, LA	14,648	99.99	73	4.98	16.3	0.066
New Orleans, LA	118,708	99.98	611	5.15	46.8	0.222
Shreveport, LA	36,822	99.98	138	3.76	21.2	0.078
Oklahoma	378,716	99.02	2,478	6.53+	30.3	0.194
Enid, OK	8,215	99.94	53	6.44	19.5	0.115
Lawton, OK	8,221	99.99	34	4.14	34.1	0.126
Oklahoma City, OK	88,646	97.45	586	6.60+	30.4	0.199
Tulsa, OK	71,032	98.13	412	5.80	33.2	0.183

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	8,543	5.88+	37.5	0.225+
Abilene, TX	13,100	99.96	68	5.19	0.0	0.000
Amarillo, TX	19,063	99.97	115	6.01	18.6	0.106
Austin, TX	47,578	99.95	268	5.64	30.2	0.188
Beaumont, TX	42,323	99.98	253	5.96	41.4	0.239
Brazoria, TX	12,486	99.78	74	5.93	34.4	0.171
Brownsville, TX	20,169	99.86	144	7.13	60.8	0.445
Bryan, TX	6,955	99.96	36	5.18	0.0	0.000
Corpus Christi, TX	28,417	95.56	217	7.62+	45.2	0.360
Dallas, TX	172,118	99.95	906	5.26	43.9	0.237
El Paso, TX	37,292	99.94	220	5.91	36.1	0.221
Fort Worth, TX	97,947	99.96	486	4.96	35.4	0.177
Galveston, TX	19,376	99.94	104	5.37	51.9	0.269
Houston, TX	187,992	99.85	970	5.16	33.7	0.177
Killeen-Temple, TX	17,182	99.97	102	5.94	41.3	0.290
Laredo, TX	8,421	99.99	85	10.10+	55.5	0.566
Longview, TX	20,547	99.98	124	6.02	39.2	0.238
Lubbock, TX	18,957	99.97	149	7.84+	47.3	0.374
McAllen, TX	27,402	99.82	178	6.49	29.2	0.183
Midland, TX	7,362	99.96	46	6.26	40.9	0.286
Odessa, TX	9,207	99.99	49	5.32	43.3	0.234
San Angelo, TX	11,213	99.99	58	5.15	16.0	0.088
San Antonio, TX	107,989	99.28	668	6.19+	40.6	0.270
Sherman-Denison, TX	14,532	99.99	101	6.94	46.9	0.536
Texarkana, TX-AR	15,315	99.99	103	6.70	30.6	0.189
Tyler, TX	18,223	99.98	112	6.13	36.6	0.222
Victoria, TX	6,871	99.97	38	5.52	0.0	0.000
Waco, TX	23,624	99.99	143	6.04	25.1	0.165
Wichita Falls, TX	14,462	99.97	84	5.81	25.5	0.135
West	4,539,951	93.08	20,343	4.49-	36.4	0.164
Mountain	1,200,638	94.36	6,704	5.59+	37.2	0.206
Montana	97,248	99.90	528	5.44	27.1	0.142
Billings, MT	12,097	99.88	49	4.05	22.1	0.084
Great Falls, MT	9,076	99.91	50	5.52	0.0	0.000
Idaho	109,822	99.77	625	5.70	29.7	0.163
Boise City, ID	18,471	99.90	111	6.02	19.4	0.110
Wyoming	42,408	99.91	261	6.16	61.1	0.375
Casper, WY	5,379	99.91	35	6.53	30.8	0.191
Cheyenne, WY	6,885	99.96	32	4.65	30.6	0.147

See notes at end of table.



Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Colorado	266,663	94.73	1,421	5.34	36.3	0.197
Boulder-Louismont, CO	15,143	97.96	76	5.17	24.2	0.129
Colorado Springs, CO	24,699	95.03	106	4.27	18.2	0.083
Denver, CO	119,624	94.10	589	4.94	38.0	0.184
Fort Collins, CO	15,089	99.71	91	6.03	32.4	0.195
Greeley, CO	11,610	99.62	95	7.32	31.0	0.252
Pueblo, CO	15,572	94.43	90	5.85	59.0	0.389
New Mexico	125,371	92.49	628	6.61+	22.7	0.151
Albuquerque, NM	33,783	81.01	161	4.77	25.7	0.122
Las Cruces, NM	9,375	99.94	49	5.14	18.7	0.109
Santa Fe, NM	8,454	93.66	70	8.30	0.0	0.000
Arizona	348,748	91.33	1,776	5.09	42.1	0.214
Phoenix, AZ	187,381	86.74	933	4.97	40.8	0.204
Tucson, AZ	70,550	96.06	302	4.27	47.6	0.202
Utah	128,579	99.92	865	6.72+	42.0	0.266
Provo-Orem, UT	16,076	99.93	153	9.49+	48.8	0.441
Salt Lake City, UT	77,243	99.94	486	6.29+	44.0	0.262
Nevada	81,799	86.15	400	4.91	50.2	0.230
Las Vegas, NV	45,252	82.98	223	4.94	37.2	0.174
Reno, NV	19,133	89.17	87	4.58	55.1	0.226
Pacific	3,339,313	92.62	13,639	4.09-	36.1	0.149-
Washington	461,706	92.41	2,200	4.78	32.0	0.155
Bellingham, WA	13,629	99.51	65	4.77	0.0	0.000
Bremerton, WA	15,439	96.59	76	4.93	36.4	0.196
Olympia, WA	14,254	90.98	62	4.36	44.9	0.209
Richland, WA	12,559	99.85	50	3.99	57.6	0.254
Seattle, WA	159,828	86.57	677	4.25-	27.7	0.118
Spokane, WA	41,237	94.51	190	4.62	31.7	0.142
Tacoma, WA	50,245	97.24	243	4.85	31.9	0.161
Vancouver, WA	17,048	80.32	78	4.58	38.9	0.178
Yakima, WA	22,738	99.74	111	4.87	43.9	0.215
Oregon	303,778	86.84	1,509	4.98	34.1	0.175
Eugene, OR	28,947	88.67	129	4.46	32.7	0.139
Medford, OR	20,326	99.78	85	4.19	0.0	0.000
Portland, OR	99,155	72.79	409	4.14	49.0	0.213
Salem, OR	33,249	90.39	195	5.86	37.3	0.230

See notes at end of table.

Table 3. Cholecystectomy: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
California	2,477,248	93.71	9,529	3.85-	37.9	0.146-
Anaheim-Santa Ana, CA	167,171	89.39	686	4.11-	32.2	0.130
Bakersfield, CA	44,969	99.76	248	5.51	52.2	0.299
Chico, CA	27,102	99.09	115	4.24	51.8	0.186
Fresno, CA	58,425	99.90	272	4.66	44.6	0.218
Los Angeles, CA	677,939	91.40	2,503	3.70-	43.7	0.165
Merced, CA	13,462	99.86	72	5.36	15.9	0.076
Modesto, CA	33,619	98.80	181	5.38	45.6	0.239
Oakland, CA	188,258	99.08	634	3.37-	25.8	0.090-
Oxnard-Ventura, CA	49,488	93.74	207	4.18	34.6	0.143
Redding, CA	17,796	99.73	78	4.39	41.5	0.177
Riverside, CA	203,246	90.92	864	4.25-	33.5	0.144
Sacramento, CA	120,273	91.81	444	3.70-	27.1	0.102
Salinas, CA	29,131	99.86	108	3.71	62.4	0.205
San Diego, CA	205,402	91.35	779	3.80-	33.8	0.127
San Francisco, CA	163,753	89.02	492	3.01-	32.3	0.099-
San Jose, CA	105,258	99.50	374	3.56-	41.3	0.144
Santa Barbara, CA	38,021	99.70	117	3.08-	38.5	0.127
Santa Cruz, CA	24,640	99.77	85	3.44-	36.3	0.114
Santa Rosa, CA	44,775	99.49	172	3.83	45.9	0.175
Stockton, CA	40,855	91.54	170	4.16	35.6	0.143
Vallejo, CA	35,778	98.59	127	3.55-	40.2	0.139
Visalia, CA	28,811	99.91	140	4.85	28.2	0.137
Yuba City, CA	11,835	59.35	5+	4.56	37.9	0.173
Alaska	16,348	99.78	81	4.99	39.9	0.201
Anchorage, AK	5,625	99.75	25	4.47	0.0	0.000
Hawaii	80,233	83.64	320	4.00-	20.9	0.088-
Honolulu, HI	57,680	83.31	225	3.92	21.5	0.089

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.





# Repair of inguinal hernia

In 1986, repair of inguinal hernia accounted for 96,071 discharges among aged Medicare enrollees, for a rate of 3.60 discharges per 1,000 enrollees (Table 1). The 30-day post-admission death rate for repair of inguinal hernia was 11.8 deaths per 1,000 discharges, and the 30-day post-admission death rate per 1,000 enrollees for this operation was 0.042 (Table 1).

## Age and sex patterns

Hospital admission for repair of inguinal hernia is a rare event among women. Men were more than 11 times as likely to be admitted for this procedure than were women (7.96 and 0.70 discharges per 1,000, respectively). However, once hospitalized, there were no large differences in 30-day post-admission deaths per 1,000 discharges by sex. For men and women combined, the discharge rate was highest for persons aged 75–84 years (4.20 per 1,000 enrollees) and lowest for persons 85 years of age or over (3.08 per 1,000 enrollees). The 30-day post-admission death rate per 1,000 discharges increased rapidly with age. Persons aged 75–84 years were three times more likely to die (15.9 deaths per 1,000), and persons 85 years of age or over were more than seven times more likely to die (39.5 deaths per 1,000), following an admission for this procedure than were persons aged 65–74 years (5.3 deaths per 1,000).

NOTE: Repair of inguinal hernia is ICD-9-CM codes 53.0-53.1.

## Patterns by race

The discharge rate among white persons was 3.73 per 1,000 enrollees; the rate among black persons was about one-third lower (2.45 discharges per 1,000). The 30-day post-admission death rate per 1,000 discharges was almost 80 percent higher among black persons than among white persons, 20.4 per 1,000 discharges compared with 11.5 per 1,000.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic areas. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State, are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from data in these tables.

## Discharge rates

Repair of inguinal hernia is a procedure that is done both on an inpatient and outpatient basis. In 1985, about 12 percent of all inguinal hernia repairs among aged Medicare enrollees were done in the outpatient setting. The data presented here are geographic variations only in the rate of inpatient stays. Therefore, some of the regional variations could be the result of variations in the rate of outpatient surgery rather than the result of differences in the

underlying rate of surgery. The West North Central (4.17 discharges per 1,000), New England (4.10 discharges per 1,000), and West South Central (4.01 discharges per 1,000) Divisions had the highest discharge rates for repair of inguinal hernia (Table 2). The Pacific Division had the lowest rate, 1.93 discharges per 1,000 enrollees.

Variations by State in the discharge rate for repair of inguinal hernia are shown in Figure 1. Low rates were seen for west coast States and high rates for a number of Rocky Mountain and Plains States. Wyoming had the highest discharge rate (5.18 per 1,000 enrollees) for this operation, and Hawaii had the lowest rate (1.36) (Table 2).

## Urban-rural patterns

In the United States as a whole, the discharge rate for repair of inguinal hernia for persons in rural counties was 8 percent greater than that for persons in urban counties (3.79 and 3.52 per 1,000 enrollees, respectively). The 30-day post-admission death rate was slightly lower in rural counties (11.5 per 1,000 discharges) than in urban counties (11.9 per 1,000 discharges), although neither rate was statistically significantly different from the U.S. total rate.

Table 1. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As Percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	96,071	3.60	11.8	0.042
65-74 years	16,162,594	96.33	54,657	3.38	5.3	0.018
75-84 years	8,020,447	96.96	33,669	4.20	15.9	0.066
85 years or over	2,515,883	98.32	7,745	3.08	39.5	0.121
Men	10,650,991	96.01	84,814	7.96	11.8	0.094
65-74 years	7,056,445	95.90	49,715	7.05	5.4	0.038
75-84 years	2,912,366	96.02	29,005	9.96	16.8	0.166
85 years or over	682,180	97.22	6,094	8.93	40.9	0.365
Women	16,047,933	97.16	11,257	0.70	11.6	0.008
65-74 years	9,106,149	96.66	4,942	0.54	4.7	0.002
75-84 years	5,108,081	97.51	4,664	0.91	10.9	0.009
85 years or over	1,833,703	98.74	1,651	0.90	34.5	0.031
White	23,574,066	96.62	87,887	3.73	11.5	0.042
65-74 years	14,207,064	96.23	49,977	3.52	5.2	0.018
75-84 years	7,134,499	96.88	30,802	4.32	15.3	0.066
85 years or over	2,232,503	98.26	7,108	3.18	39.3	0.124
Men	9,391,016	95.94	77,508	8.25	11.5	0.094
65-74 years	6,216,472	95.83	45,472	7.31	5.3	0.038
75-84 years	2,573,989	95.94	26,457	10.28	16.1	0.165
85 years or over	600,555	97.12	5,579	9.29	40.2	0.372
Women	14,183,050	97.07	10,379	0.73	11.5	0.008
65-74 years	7,990,592	96.55	4,505	0.56	4.0	0.002
75-84 years	4,560,510	97.42	4,345	0.95	10.6	0.010
85 years or over	1,631,948	98.69	1,529	0.94	36.0	0.033
Black	1,991,943	97.86	4,890	2.45	20.4	0.050
65-74 years	1,213,014	97.54	2,597	2.14	9.2	0.019
75-84 years	583,429	98.11	1,828	3.13	27.9	0.087
85 years or over	195,500	99.11	465	2.38	53.8	0.127
Men	792,788	97.49	4,403	5.55	20.7	0.114
65-74 years	519,305	97.28	2,373	4.57	8.8	0.040
75-84 years	215,401	97.67	1,643	7.63	28.6	0.218
85 years or over	58,082	98.74	387	6.66	59.4	0.395
Women	1,199,155	98.10	487	0.41	18.5	0.007
65-74 years	693,709	97.74	224	0.32	13.4	0.004
75-84 years	368,028	98.37	185	0.50	21.6	0.010
85 years or over	137,418	99.26	78	0.57	25.6	0.014

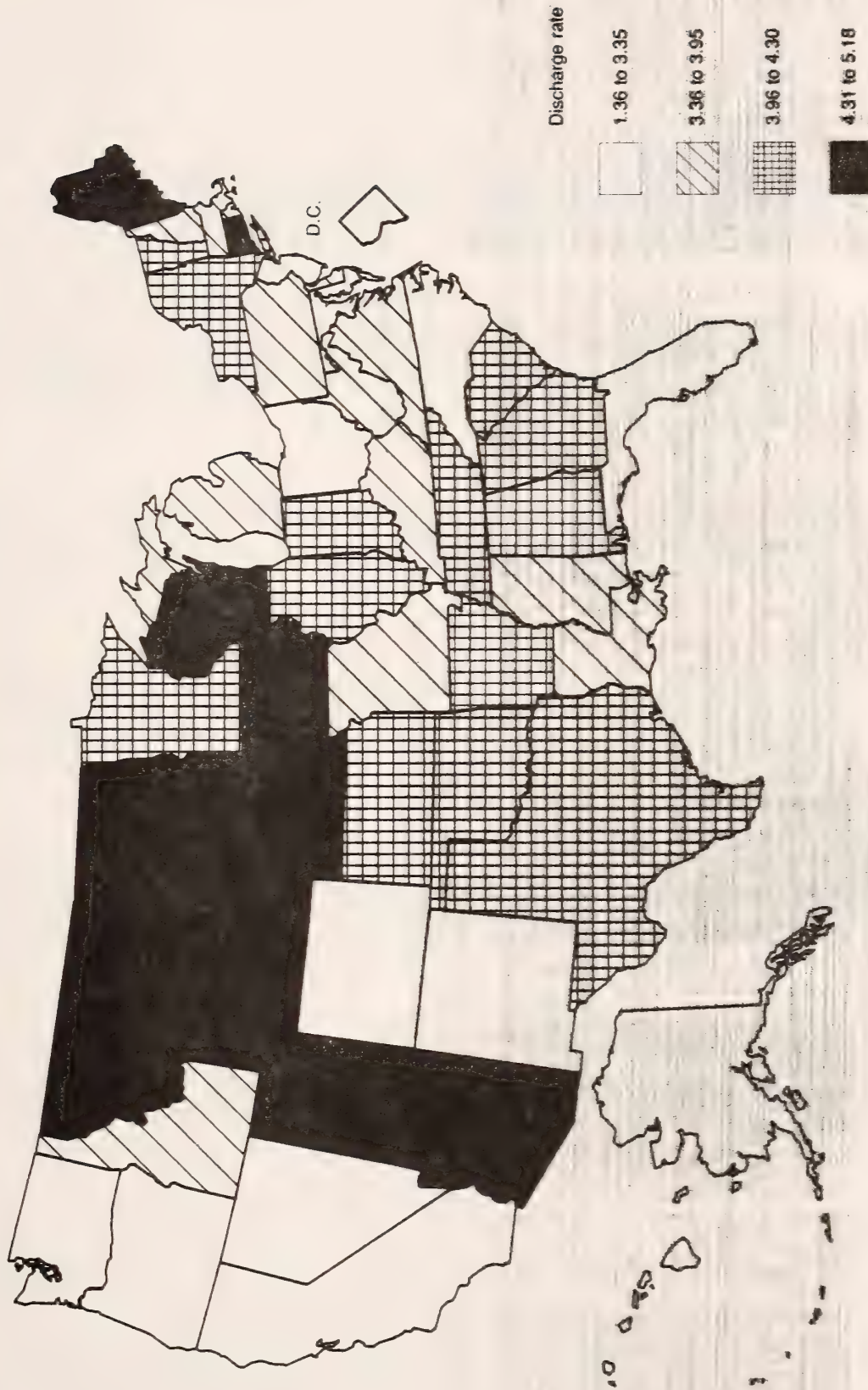
(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



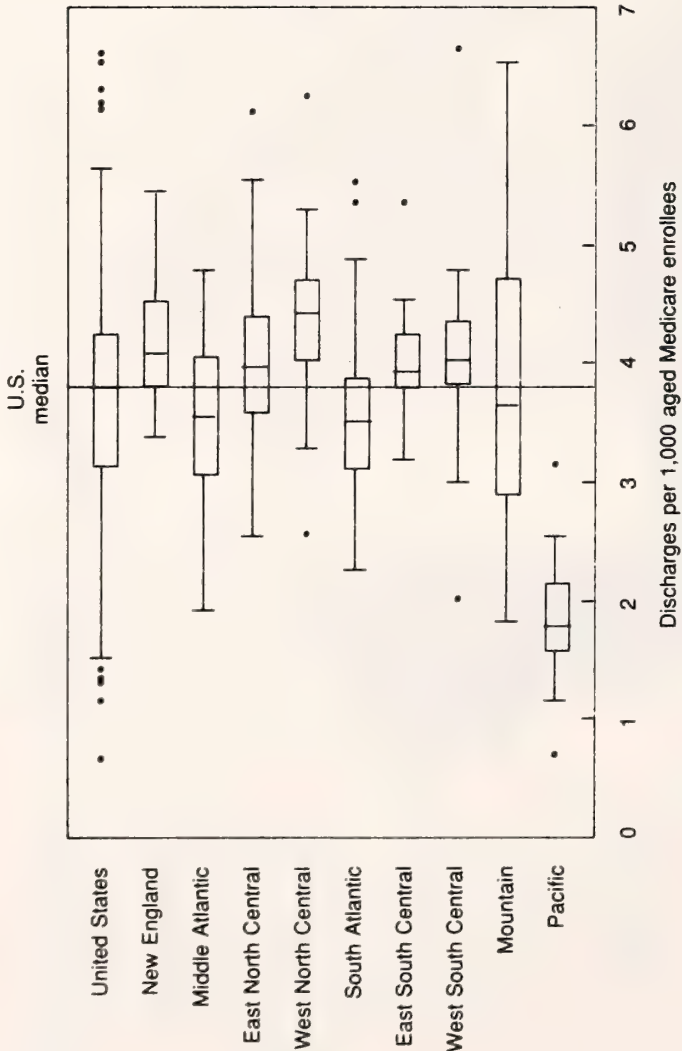
**Figure 1. Repair of inguinal hernia: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
 SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.



Figure 2. Repair of inguinal hernia: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986



Outliers for discharges per 1,000 enrollees

Area	Rural or metropolitan statistical area	Rate
United States	Anchorage, AK	0.68
	Rural counties, HI	1.16
	Medford, OR	1.37
	Bremerton, WA	1.39
	Santa Rosa, CA	1.41
	Honolulu, HI	1.45
	Yakima, WA	1.45
	Anderson, IN	6.09
	Lawrence, KS	6.17
	Casper, WY	6.31
East North Central	Provo-Orem, UT	6.53
	Midland, TX	6.61
	Anderson, IN	6.09
West North Central	St Joseph, MO	2.51
	Lawrence, KS	6.17
South Atlantic	Albany, GA	5.34
	Athens, GA	5.51
East South Central	Jackson, TN	5.30
	Odessa, TX	2.02
West South Central	Midland, TX	6.61
Pacific	Anchorage, AK	0.68
	Yuba City, CA	3.11

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
United States	26,698,924	96.70	96,071	3.60	11.8	0.042		
Metropolitan	19,363,284	95.80	67,242	3.52-	11.9	0.042		
Rural	7,335,640	99.16	28,829	3.79+	11.5	0.043		
Northeast	6,276,897	98.04	23,475	3.83+	12.1	0.046		
Metropolitan	5,564,648	97.84	20,683	3.82+	12.5	0.048		
Rural	712,249	99.69	2,792	3.85	9.4	0.036		
New England	1,569,313	96.20	6,232	4.10+	10.2	0.039		
Metropolitan	1,342,886	95.66	5,294	4.11+	11.4	0.043		
Rural	226,427	99.53	938	4.05	3.5-	0.013-		
Maine	153,209	99.88	710	4.61+	12.5	0.051		
Metropolitan	82,345	99.89	378	4.68+	18.7	0.084		
Rural	70,864	99.87	332	4.53	3.8	0.014		
New Hampshire	114,752	98.98	429	3.76	9.5	0.034		
Metropolitan	74,135	98.55	270	3.74	11.3	0.040		
Rural	40,617	99.77	159	3.80	6.5	0.024		
Vermont	62,781	99.82	266	4.21	3.8	0.015		
Metropolitan	10,422	99.91	41	4.09	0.0	0.000		
Rural	52,359	99.80	225	4.24	4.5	0.019		
Massachusetts	709,478	93.75	2,637	3.93+	11.9	0.042		
Metropolitan	659,025	93.40	2,454	3.97+	12.7	0.046		
Rural	50,453	98.58	183	3.55	0.0	0.000		
Rhode Island	132,332	97.59	483	3.81	12.4	0.045		
Metropolitan	132,332	97.59	483	3.81	12.4	0.045		
Rural	0	0.00	0	0.00	0.0	0.000		
Connecticut	396,761	97.56	1,707	4.37+	7.3	0.030		
Metropolitan	384,627	97.50	1,668	4.40+	7.6	0.032		
Rural	12,134	99.66	39	3.26	0.0	0.000		
Middle Atlantic	4,707,584	98.68	17,243	3.74+	12.8	0.050		
Metropolitan	4,221,762	98.55	15,389	3.74+	12.9	0.050		
Rural	485,822	99.76	1,854	3.76	12.0	0.047		
New York	2,143,249	98.98	8,642	4.12+	11.5	0.047		
Metropolitan	1,922,371	98.89	7,712	4.12+	11.6	0.047		
Rural	220,878	99.75	930	4.14+	11.2	0.048		

See notes at end of table.

Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
New Jersey	916,155	97.84	3,022	3.35-	13.1	0.046		
Metropolitan	916,155	97.84	3,022	3.35-	13.1	0.046		
Rural	0	0.00	0	0.00	0.0	0.000		
Pennsylvania	1,648,180	98.75	5,579	3.45	14.5	0.054		
Metropolitan	1,383,236	98.56	4,655	3.46	14.8	0.055		
Rural	264,944	99.78	924	3.44	12.9	0.046		
North Central	6,901,975	96.39	27,487	4.00+	12.4	0.048		
Metropolitan	4,398,761	95.22	16,788	3.92+	13.0	0.049		
Rural	2,503,214	98.51	10,699	4.13+	11.4	0.046		
East North Central	4,745,430	97.76	18,458	3.92+	13.4	0.051		
Metropolitan	3,453,558	97.13	13,030	3.86+	14.0	0.052		
Rural	1,291,872	99.47	5,428	4.08+	11.9	0.048		
Ohio	1,263,869	99.46	4,104	3.29-	16.2	0.053		
Metropolitan	987,528	99.60	3,199	3.31-	16.4	0.054		
Rural	276,341	98.95	905	3.22	15.6	0.050		
Indiana	623,062	97.86	2,622	4.27+	11.8	0.047		
Metropolitan	399,457	97.01	1,689	4.34+	13.4	0.053		
Rural	223,605	99.41	933	4.15+	9.0	0.035		
Illinois	1,265,011	95.90	5,091	4.11+	11.4	0.045		
Metropolitan	952,934	94.73	3,792	4.10+	12.8	0.050		
Rural	312,077	99.68	1,299	4.13+	7.8	0.034		
Michigan	982,444	96.86	3,601	3.66	16.2	0.060		
Metropolitan	744,347	96.06	2,622	3.59	15.0	0.054		
Rural	238,097	99.44	979	3.88	19.3	0.077		
Wisconsin	611,044	99.60	3,040	4.87+	10.9	0.049		
Metropolitan	369,292	99.43	1,728	4.72+	11.2	0.047		
Rural	241,752	99.86	1,312	5.07+	10.6	0.051		
West North Central	2,156,545	93.50	9,029	4.17+	10.4	0.042		
Metropolitan	945,203	88.82	3,758	4.17+	9.8	0.041		
Rural	1,211,342	97.51	5,271	4.18+	10.8	0.043		
Minnesota	397,258	77.30	1,565	3.97	8.2	0.029		
Metropolitan	187,915	67.07	641	3.74	7.4	0.024		
Rural	209,343	89.55	924	4.16+	8.9	0.034		

See notes at end of table.



Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa	404,057	99.37	1,809	4.45+	9.6	0.041
Metropolitan	136,818	98.24	595	4.48+	10.2	0.042
Rural	267,239	99.96	1,214	4.44+	9.3	0.040
Missouri	655,875	98.17	2,440	3.75	12.9	0.049
Metropolitan	383,255	96.99	1,485	4.05+	12.3	0.053
Rural	272,620	99.88	955	3.36	13.9	0.045
North Dakota	85,433	98.28	436	4.74+	8.7	0.043
Metropolitan	22,964	98.14	114	4.92	7.1	0.041
Rural	62,469	98.34	322	4.68+	9.3	0.044
South Dakota	96,216	99.59	469	4.65+	5.9	0.028
Metropolitan	20,427	99.92	92	4.49	0.0	0.000
Rural	75,789	99.51	377	4.69+	7.2	0.035
Nebraska	209,910	98.52	988	4.63+	10.7	0.048
Metropolitan	70,076	95.86	326	4.86+	3.0-	0.014
Rural	139,834	99.91	662	4.53+	14.4	0.063
Kansas	307,796	95.82	1,322	4.30+	11.3	0.045
Metropolitan	123,748	93.24	505	4.21	11.1	0.047
Rural	184,048	97.63	817	4.36+	11.4	0.043
South	8,980,101	97.94	33,655	3.73+	11.6	0.042
Metropolitan	5,757,016	96.87	21,263	3.72+	11.2	0.041
Rural	3,223,085	99.91	12,392	3.75+	12.2	0.044
South Atlantic	4,668,855	96.31	16,466	3.53	12.0	0.043
Metropolitan	3,313,125	94.94	11,534	3.50	12.0	0.042
Rural	1,355,730	99.84	4,932	3.60	12.1	0.043
Delaware	70,251	99.94	250	3.58	7.0	0.030
Metropolitan	44,355	99.95	149	3.44	5.7	0.023
Rural	25,896	99.94	101	3.81	9.3	0.040
Maryland	436,606	99.49	1,388	3.24-	12.1	0.043
Metropolitan	395,091	99.44	1,279	3.31	11.5	0.042
Rural	41,515	99.95	109	2.56-	19.5	0.049
District of Col.	66,196	99.75	135	2.17-	4.6	0.014
Metropolitan	66,196	99.75	135	2.17-	4.6	0.014
Rural	0	0.00	0	0.00	0.0	0.000

See notes at end of table.

Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Virginia	566,135	99.91	2,055	3.70	13.3	0.047
Metropolitan	355,193	99.87	1,263	3.69	11.8	0.041
Rural	210,942	99.97	792	3.70	15.7	0.058
West Virginia	244,259	98.98	941	3.84	14.5	0.054
Metropolitan	90,704	97.39	349	3.93	15.7	0.068
Rural	153,555	99.95	592	3.79	13.6	0.045
North Carolina	689,138	99.93	2,224	3.32	7.8	0.025-
Metropolitan	346,905	99.89	1,130	3.40	8.0	0.025
Rural	342,233	99.96	1,094	3.25	7.7	0.025
South Carolina	329,020	99.44	1,266	3.97	13.6	0.053
Metropolitan	186,873	99.05	699	3.89	16.9	0.064
Rural	142,147	99.95	567	4.07	9.6	0.038
Georgia	561,716	99.71	2,318	4.30+	11.1	0.045
Metropolitan	313,319	99.54	1,305	4.41+	9.2	0.038
Rural	248,397	99.93	1,013	4.16+	13.4	0.054
Florida	1,705,534	90.97	5,889	3.31-	13.2	0.044
Metropolitan	1,514,489	90.04	5,225	3.34-	13.2	0.044
Rural	191,045	99.17	664	3.15	13.3	0.044
East South Central	1,726,272	99.80	6,659	3.87+	11.1	0.039
Metropolitan	873,594	99.64	3,405	4.00+	8.7	0.033
Rural	852,678	99.97	3,254	3.74	13.7	0.045
Kentucky	422,657	99.70	1,444	3.41	13.6	0.042
Metropolitan	183,264	99.37	669	3.80	14.4	0.050
Rural	239,393	99.96	775	3.13-	12.9	0.037
Tennessee	550,327	99.65	2,181	3.99+	11.8	0.044
Metropolitan	342,007	99.46	1,366	4.10+	10.6	0.041
Rural	208,320	99.96	815	3.82	14.1	0.049
Alabama	463,131	99.97	1,877	4.10+	8.8	0.033
Metropolitan	281,960	99.97	1,100	3.99	4.0-	0.015-
Rural	181,171	99.97	777	4.25+	16.0	0.060
Mississippi	290,157	99.98	1,157	3.95	10.0	0.036
Metropolitan	66,363	99.96	270	4.07	3.7	0.015
Rural	223,794	99.98	887	3.91	12.1	0.042

See notes at end of table.

Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central	2,584,974	99.74	10,530	4.01+	11.2	0.043
	1,570,297	99.59	6,324	4.05+	11.2	0.043
	1,014,677	99.97	4,206	3.96+	11.2	0.043
Arkansas	321,739	99.96	1,340	4.02	7.0	0.027
	100,966	99.98	386	3.85	9.0	0.029
	220,773	99.95	954	4.09	6.3	0.027
Louisiana	415,968	99.98	1,610	3.86	14.0	0.050
	268,137	99.98	1,022	3.88	13.1	0.049
	147,831	99.99	588	3.82	15.6	0.051
Oklahoma	378,716	99.02	1,587	4.16+	10.0	0.038
	180,038	98.00	774	4.39+	9.9	0.038
	198,678	99.96	813	3.95	10.1	0.038
Texas	1,468,551	99.81	5,993	4.02+	11.7	0.047
	1,021,156	99.73	4,142	4.05+	11.1	0.044
	447,395	99.97	1,851	3.95	13.0	0.051
West	4,539,951	93.08	11,454	2.44-	10.6	0.028-
	3,642,859	91.96	8,508	2.30-	10.3	0.026-
	897,092	97.88	2,946	2.98-	11.4	0.037
Mountain	1,200,638	94.36	4,840	3.84+	9.6	0.040
	720,893	92.10	2,803	3.81	8.9	0.038
	479,745	97.98	2,037	3.87	10.7	0.044
Montana	97,248	99.90	488	4.70+	16.7	0.082
	21,173	99.90	118	5.39	0.0	0.000
	76,075	99.91	370	4.51+	21.7	0.105
Idaho	109,822	99.77	409	3.44	9.6	0.037
	18,471	99.90	62	3.29	0.0	0.000
	91,351	99.74	347	3.47	11.5	0.044
Wyoming	42,408	99.91	231	5.18+	4.4	0.023
	12,265	99.93	61	4.92	0.0	0.000
	30,143	99.89	170	5.28+	6.3	0.033
Colorado	266,663	94.73	751	2.78-	8.5	0.026
	201,737	95.23	548	2.74-	9.9	0.029
	64,926	93.22	203	2.90	4.6	0.015

See notes at end of table.



Table 2. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	436	3.28	9.4	0.032
Metropolitan	51,612	85.86	147	2.83	13.2	0.040
Rural	73,759	97.76	289	3.58	7.3	0.027
Arizona	348,748	91.33	1,601	4.36+	7.5	0.036
Metropolitan	257,931	89.11	1,214	4.59+	8.0	0.040
Rural	90,817	98.31	387	3.76	5.7	0.025
Utah	128,579	99.92	692	5.12+	8.4	0.047
Metropolitan	93,319	99.94	474	4.91+	8.0	0.043
Rural	35,260	99.88	218	5.63+	9.2	0.056
Nevada	81,799	86.15	232	2.62-	25.3	0.071
Metropolitan	64,385	84.73	179	2.59-	25.2	0.073
Rural	17,414	91.83	53	2.73	25.9	0.065
Pacific	3,339,313	92.62	6,614	1.93-	11.2	0.024-
Metropolitan	2,921,966	91.93	5,705	1.92-	11.0	0.023-
Rural	417,347	97.77	909	1.97-	12.9	0.029
Washington	461,706	92.41	798	1.67-	19.2	0.034
Metropolitan	346,977	90.86	559	1.59-	20.4	0.034
Rural	114,729	97.42	239	1.91-	16.4	0.034
Oregon	303,778	86.84	679	2.16-	9.3	0.023
Metropolitan	181,677	80.38	390	2.16-	11.5	0.026
Rural	122,101	98.65	289	2.15-	6.4	0.017
California	2,477,248	93.71	4,979	1.97-	9.8	0.022-
Metropolitan	2,330,007	93.36	4,655	1.97-	9.6	0.021-
Rural	147,241	99.57	324	1.99-	12.0	0.028
Alaska	16,348	99.78	28	1.52-	77.1	0.141
Metropolitan	5,625	99.75	4	0.68-	161.8	0.228
Rural	10,723	99.80	24	1.91-	50.6	0.102
Hawaii	80,233	83.64	130	1.36-	23.6	0.025
Metropolitan	57,680	83.31	97	1.45-	14.8	0.018
Rural	22,553	84.47	33	1.16-	57.7	0.043

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	96,071	3.60	11.8	0.042
Northeast	6,276,897	98.04	23,475	3.83+	12.1	0.046
New England	1,569,313	96.20	6,232	4.10+	10.2	0.039
Maine	153,209	99.88	710	4.61+	12.5	0.051
Bangor, ME	16,035	99.87	62	3.87	0.0	0.000
Lewiston-Auburn, ME	13,464	99.93	71	5.48	40.5	0.218
Portland, ME	52,846	99.89	245	4.72	16.8	0.074
New Hampshire	114,752	98.98	429	3.76	9.5	0.034
Manchester, NH	44,397	97.91	154	3.61	7.0	0.022
Portsmouth, NH	29,738	99.52	116	3.92	16.6	0.069
Vermont	62,781	99.82	266	4.21	3.8	0.015
Burlington, VT	10,422	99.91	41	4.09	0.0	0.000
Massachusetts	709,478	93.75	2,637	3.93+	11.9	0.042
Boston, MA	429,794	95.67	1,592	3.96	12.6	0.044
New Bedford, MA	65,540	98.67	223	3.55	14.4	0.046
Pittsfield, MA	20,281	91.00	98	5.04	20.0	0.096
Springfield, MA	72,225	92.57	292	4.25	12.8	0.055
Worcester, MA	71,185	79.42	249	3.76	8.4	0.027
Rhode Island	132,332	97.59	483	3.81	12.4	0.045
Providence, RI	132,332	97.59	483	3.81	12.4	0.045
Connecticut	396,761	97.56	1,707	4.37+	7.3	0.030
Bridgeport, CT	96,911	96.63	438	4.61+	12.1	0.052
Hartford, CT	157,139	99.16	688	4.41+	7.5	0.032
New Haven, CT	102,964	95.31	417	4.17	5.0	0.019-
New London, CT	27,613	99.70	125	4.53	0.0	0.000

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Middle Atlantic	4,707,584	98.68	17,243	3.74+	12.8	0.050+
New York	2,143,249	98.98	8,642	4.12+	11.5	0.047
Albany, NY	115,122	98.78	454	4.06	14.7	0.060
Binghamton, NY	35,576	99.96	74	2.13-	18.4	0.028
Buffalo, NY	134,451	98.66	477	3.68	11.9	0.046
Elmira, NY	13,699	99.94	64	4.77	0.0	0.000
Glens Falls, NY	15,222	99.63	63	4.14	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	1,273	4.29+	8.0	0.034
New York, NY	997,473	99.58	4,114	4.27+	11.6	0.049
Niagara Falls, NY	30,841	99.69	98	3.19	12.1	0.034
Orange County, NY	30,488	99.89	125	4.12	18.0	0.065
Poughkeepsie, NY	27,864	98.47	128	4.64	0.0	0.000
Rochester, NY	102,542	88.80	366	3.70	14.6	0.057
Syracuse, NY	75,217	99.92	274	3.71	21.0	0.081
Utica-Rome, NY	46,733	99.90	202	4.41	16.2	0.065
New Jersey	916,155	97.84	3,022	3.35-	13.1	0.046
Atlantic City, NJ	46,406	97.93	184	4.01	4.7	0.021
Bergen-Passaic, NJ	171,246	99.45	606	3.58	9.6	0.036
Jersey City, NJ	64,069	99.25	215	3.52	10.3	0.032
Middlesex, NJ	91,009	94.70	269	2.99	15.0	0.048
Monmouth-Ocean, NJ	154,643	99.57	435	2.78-	9.6	0.026
Newark, NJ	211,511	99.40	666	3.24	13.9	0.048
Trenton, NJ	38,499	97.14	110	2.96	38.0	0.135
Vineland, NJ	16,382	96.17	48	2.95	0.0	0.000
Pennsylvania	1,648,180	98.75	5,579	3.45	14.5	0.054
Allentown, PA-NJ	94,668	99.09	310	3.31	24.4	0.100
Altoona, PA	20,692	99.99	67	3.32	12.7	0.048
Beaver County, PA	27,562	99.95	113	4.06	22.1	0.080
Erie, PA	35,244	99.92	69	1.97-	14.5	0.030
Harrisburg, PA	72,929	99.95	180	2.52-	8.9	0.028
Johnstown, PA	40,260	99.97	137	3.40	35.1	0.133
Lancaster, PA	48,045	99.93	165	3.42	10.6	0.040
Philadelphia, PA-NJ	569,054	95.81	3,026	3.72	12.2	0.048
Pittsburgh, PA	323,494	99.06	1,192	3.77	15.8	0.058
Reading, PA	48,476	99.88	169	3.46	26.3	0.104
Scranton, PA	122,888	99.95	381	3.26	8.7	0.034
Sharon, PA	19,009	99.97	82	4.26	0.0	0.000
State College, PA	10,032	99.97	28	2.76	26.5	0.102
Williamsport, PA	16,877	99.98	44	2.63	42.1	0.118
York, PA	48,541	99.96	151	3.06	24.9	0.083

See notes at end of table.



Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees		
North Central	6,901,975	96.39	27,487	4.00+	12.4	0.048		
East North Central	4,745,430	97.76	18,458	3.92+	13.4	0.051+		
Ohio	1,263,869	99.46	4,104	3.29-	16.2	0.053		
Akron, OH	75,615	99.90	213	2.87	18.2	0.068		
Canton, OH	51,895	99.97	146	2.81	6.8	0.020		
Cincinnati, OH-KY-IN	159,407	99.96	573	3.75	8.5	0.031		
Cleveland, OH	242,585	99.71	754	3.20	17.0	0.052		
Columbus, OH	121,377	99.73	418	3.58	18.4	0.067		
Dayton, OH	103,547	99.95	387	3.79	16.3	0.050		
Hamilton, OH	26,009	99.95	77	3.02	29.5	0.078		
Lima, OH	19,579	99.97	69	3.57	0.0	0.000		
Lorain-Elyria, OH	27,340	99.85	69	2.50	11.8	0.039		
Mansfield, OH	15,230	99.96	55	3.63	0.0	0.000		
Steubenville, OH-WV	21,934	98.57	84	3.83	14.4	0.049		
Toledo, OH	70,660	99.95	247	3.60	24.3	0.101		
Youngstown, OH	69,319	99.95	204	2.94	15.2	0.047		
Indiana	623,062	97.86	2,622	4.27+	11.8	0.047		
Anderson, IN	17,198	99.83	102	6.09+	0.0	0.000		
Bloomington, IN	7,913	99.87	40	5.12	34.0	0.126		
Elkhart-Goshen, IN	15,647	99.92	58	3.75	15.8	0.063		
Evansville, IN-KY	34,434	95.72	133	3.98	15.9	0.058		
Fort Wayne, IN	37,565	97.77	135	3.68	7.5	0.026		
Gary-Hammond, IN	61,160	97.01	279	4.52	4.4	0.018		
Indianapolis, IN	118,407	93.81	494	4.35	13.1	0.051		
Kokomo, IN	10,842	99.94	56	5.30	36.3	0.190		
Lafayette, IN	11,228	99.92	34	3.09	82.5	0.175		
Muncie, IN	13,759	99.91	52	3.96	79.7	0.226		
South Bend, IN	33,170	99.93	156	4.78	10.5	0.061		
Terre Haute, IN	19,585	99.89	76	4.15	0.0	0.000		
Illinois	1,265,011	95.90	5,091	4.11+	11.4	0.045		
Aurora-Elgin, IL	30,946	98.68	125	4.17	0.0	0.000		
Bloomington, IL	12,672	99.94	60	4.88	0.0	0.000		
Champaign, IL	13,391	99.91	55	4.23	0.0	0.000		
Chicago, IL	608,135	92.94	2,408	4.11+	14.2	0.055		
Decatur, IL	15,992	99.97	62	4.00	35.1	0.123		
Joliet, IL	28,047	97.18	110	3.99	15.3	0.074		
Kankakee, IL	12,020	99.94	35	2.88	0.0	0.000		
Lake County, IL	36,099	96.52	145	4.06	14.0	0.058		
Peoria, IL	43,549	99.93	179	4.14	5.4	0.022		
Rockford, IL	28,351	88.93	91	3.22	0.0	0.000		
Springfield, IL	24,799	99.96	105	4.53	10.0	0.040		

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	3,601	3.66	16.2	0.060
Ann Arbor, MI	17,760	95.12	58	3.39	14.3	0.056
Battle Creek, MI	16,831	99.89	76	4.57	0.0	0.000
Benton Harbor, MI	21,618	99.88	88	4.02	21.7	0.094
Detroit, MI	448,826	96.43	1,579	3.58	16.3	0.058
Flint, MI	43,084	91.01	162	3.91	31.0	0.120
Grand Rapids, MI	64,091	95.42	233	3.68	0.0	0.000
Jackson, MI	17,046	99.82	46	2.72	18.8	0.060
Kalamazoo, MI	21,512	99.85	68	3.29	13.8	0.047
Lansing, MI	32,460	90.23	91	2.91	11.2	0.030
Muskegon, MI	18,957	98.06	71	3.73	13.3	0.055
Saginaw, MI	42,162	96.18	150	3.58	13.5	0.049
Wisconsin	611,044	99.60	3,040	4.87+	10.9	0.049
Appleton, WI	34,483	99.96	180	5.14+	33.5	0.113
Eau Claire, WI	16,955	99.94	77	4.38	13.0	0.056
Green Bay, WI	19,185	99.97	84	4.42	0.0	0.000
Janesville, WI	16,529	99.85	91	5.53	17.7	0.058
Kenosha, WI	14,291	99.91	63	4.38	0.0	0.000
LaCrosse, WI	11,858	99.91	55	4.77	28.0	0.161
Madison, WI	30,776	99.74	132	4.35	7.4	0.031
Milwaukee, WI	166,813	99.21	776	4.78+	7.8	0.035
Racine, WI	20,503	99.90	75	3.67	38.1	0.097
Sheboygan, WI	14,461	99.98	66	4.54	0.0	0.000
Wausau, WI	12,945	99.95	65	4.83	0.0	0.000
West North Central	2,156,545	93.50	9,029	4.17+	10.4	0.042
Minnesota	397,258	77.30	1,565	3.97	8.2	0.029-
Duluth, MN-WI	29,977	76.74	102	3.55	19.8	0.065
Minneapolis, MN-WI	141,769	64.45	507	3.98	7.7	0.026
Rochester, MN	9,393	99.67	31	3.47	0.0	0.000
St. Cloud, MN	12,248	70.92	46	3.84	0.0	0.000
Iowa	404,057	99.37	1,809	4.45+	9.6	0.041
Cedar Rapids, IA	19,323	99.94	82	4.32	0.0	0.000
Davenport, IA-IL	44,646	99.94	195	4.43	0.0	0.000
Des Moines, IA	40,067	94.50	179	4.74	21.8	0.097
Dubuque, IA	11,460	99.95	52	4.80	20.6	0.085
Iowa City, IA	6,240	99.90	28	4.61	0.0	0.000
Sioux City, IA-NE	15,951	99.96	64	4.06	0.0	0.000
Waterloo, IA	19,521	99.96	90	4.61	0.0	0.000

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	2,440	3.75	12.9	0.049
Columbia, MO	8,560	99.98	38	4.50	0.0	0.000
Joplin, MO	19,275	99.95	76	4.02	21.4	0.103
Kansas City, MO-KS	154,919	95.72	635	4.25	5.7	0.024
St. Joseph, MO	13,630	99.97	33	2.51	23.3	0.070
St. Louis, MO-IL	283,167	97.43	1,126	4.14+	17.0	0.073
Springfield, MO	27,676	99.94	128	4.71	18.5	0.071
North Dakota	85,433	98.28	436	4.74+	8.7	0.043
Bismarck, ND	8,160	95.13	40	4.87	0.0	0.000
Fargo, ND-MN	14,138	96.57	63	4.40	0.0	0.000
Grand Forks, ND	5,687	99.95	30	5.19	19.1	0.162
South Dakota	96,216	99.59	469	4.65+	5.9	0.028
Rapid City, SD	7,152	99.89	37	5.01	0.0	0.000
Sioux Falls, SD	13,275	99.93	55	4.19	0.0	0.000
Nebraska	209,910	98.52	988	4.63+	10.7	0.048
Lincoln, NE	20,994	98.50	98	4.85	0.0	0.000
Omaha, NE-IA	57,609	95.39	272	4.91+	7.1	0.033
Kansas	307,796	95.82	1,322	4.30+	11.3	0.045
Lawrence, KS	4,965	87.78	30	6.17	0.0	0.000
Topeka, KS	18,983	97.26	62	3.38	0.0	0.000
Wichita, KS	45,844	88.57	140	3.18	17.1	0.064
South	8,980,101	97.94	33,655	3.73+	11.6	0.042
South Atlantic	4,668,855	96.31	16,466	3.53	12.0	0.043
Delaware	70,251	99.94	250	3.58	7.0	0.030
Wilmington, DE-NJ-MD	58,114	99.65	203	3.53	4.3	0.018
Maryland	436,606	99.49	1,388	3.24-	12.1	0.043
Baltimore, MD	244,878	99.90	846	3.54	10.6	0.042
Cumberland, MD-WV	17,051	99.95	39	2.34	0.0	0.000
Hagerstown, MD	14,522	99.95	34	2.37	84.6	0.141
District of Col.	66,196	99.75	135	2.17-	4.6	0.014
Washington, DC-MD-VA	261,121	99.05	774	3.08-	6.4	0.020

See notes at end of table.



Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	2,055	3.70	13.3	0.047
Charlottesville, VA	12,020	99.92	49	4.08	22.9	0.083
Danville, VA	15,532	99.99	59	3.88	16.5	0.067
Lynchburg, VA	18,110	99.99	43	2.46	0.0	0.000
Norfolk, VA	102,601	99.96	370	3.74	14.7	0.053
Richmond, VA	85,698	99.98	315	3.68	15.0	0.061
Roanoke, VA	30,622	99.98	93	3.19	8.4	0.031
West Virginia	244,259	98.98	941	3.84	14.5	0.054
Charleston, WV	34,215	99.96	117	3.47	14.0	0.061
Huntington, WV-KY-OH	40,891	99.95	136	3.34	15.5	0.048
Parkersburg, WV-OH	19,888	99.94	91	4.63	10.3	0.049
Wheeling, WV-OH	22,016	82.51	68	3.28	42.3	0.138
North Carolina	689,138	99.93	2,224	3.32-	7.8	0.025-
Asheville, NC	24,469	99.92	89	3.71	0.0	0.000
Burlington, NC	14,505	99.99	49	3.50	21.6	0.074
Charlotte, NC	109,337	98.79	327	3.13	10.0	0.029
Fayetteville, NC	13,388	99.98	30	2.35	0.0	0.000
Greensboro, NC	99,387	99.97	329	3.45	10.2	0.032
Hickory, NC	23,392	99.97	76	3.35	0.0	0.000
Jacksonville, NC	5,134	99.86	11	2.20	165.5	0.231
Raleigh-Durham, NC	56,484	99.86	209	3.93	6.0	0.018
Wilmington, NC	12,634	99.97	42	3.52	0.0	0.000
South Carolina	329,020	99.44	1,266	3.97	13.6	0.053
Anderson, SC	16,583	99.70	49	3.07	17.8	0.066
Charleston, SC	34,246	98.90	130	3.92	0.0	0.000
Columbia, SC	35,361	99.98	124	3.67	15.6	0.052
Florence, SC	11,195	99.96	44	4.21	52.8	0.200
Greenville, SC	65,893	98.01	272	4.31	20.8	0.082
Georgia	561,716	99.71	2,318	4.30+	11.1	0.045
Albany, GA	9,292	99.92	47	5.34	0.0	0.000
Athens, GA	13,510	99.96	71	5.51	16.7	0.077
Atlanta, GA	189,539	98.27	802	4.49+	6.8	0.028
Augusta, GA-SC	32,938	99.93	97	3.06	0.0	0.000
Columbus, GA-AL	22,847	99.96	91	4.20	20.9	0.096
Macon, GA	25,929	99.97	117	4.87	20.1	0.084
Savannah, GA	25,338	99.94	100	4.08	0.0	0.000

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	5,889	3.31-	13.2	0.044
Bradenton, FL	42,906	99.68	131	2.89	6.9	0.022
Daytona Beach, FL	62,616	92.90	195	2.98	5.0	0.015
Fort Lauderdale, FL	181,839	81.09	603	3.28	14.1	0.047
Fort Myers, FL	61,428	99.65	213	3.14	20.6	0.052
Fort Pierce, FL	41,198	99.28	149	3.29	17.4	0.053
FT. Walton Beach, FL	10,169	99.88	40	3.76	0.0	0.000
Gainesville, FL	16,758	99.58	56	3.23	18.0	0.061
Jacksonville, FL	80,895	98.22	294	3.70	15.0	0.065
Lakeland, FL	55,495	99.56	201	3.42	4.9	0.019
Melbourne, FL	46,501	99.72	134	2.68-	0.0	0.000
Miami-Hialeah, FL	168,502	79.57	642	3.84	12.3	0.047
Naples, FL	23,433	99.75	80	3.00	35.7	0.094
Ocala, FL	31,367	99.50	96	2.77	15.2	0.035
Orlando, FL	90,604	98.55	328	3.57	6.8	0.023
Panama City, FL	11,817	99.70	45	3.68	28.6	0.094
Pensacola, FL	29,972	99.89	122	4.07	24.8	0.110
Sarasota, FL	77,895	99.81	205	2.42-	34.5	0.076
Tallahassee, FL	17,414	97.85	45	2.61	0.0	0.000
Tampa, FL	323,951	87.05	1,131	3.42	15.3	0.054
West Palm Beach, FL	139,729	85.22	515	3.51	6.6	0.021
East South Central	1,726,272	99.80	6,659	3.87+	11.1	0.039
Kentucky	422,657	99.70	1,444	3.41	13.6	0.042
Lexington, KY	31,008	98.87	107	3.57	8.7	0.032
Louisville, KY-IN	107,485	99.20	398	3.86	15.4	0.056
Owensboro, KY	10,319	99.96	39	3.95	34.1	0.100
Tennessee	550,327	99.65	2,181	3.99+	11.8	0.044
Chattanooga, TN-GA	50,061	99.97	191	3.95	10.5	0.040
Clarksville, TN-KY	12,541	99.91	54	4.27	22.6	0.078
Jackson, TN	10,064	99.95	52	5.30	0.0	0.000
Johnson City, TN-VA	55,068	99.97	227	4.15	4.6	0.019
Knoxville, TN	70,970	99.96	264	3.79	25.3	0.088
Memphis, TN-AR-MS	88,836	98.06	343	3.97	8.8	0.033
Nashville, TN	92,994	99.96	397	4.37	10.6	0.044

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	1,877	4.10+	8.8	0.033
Anniston, AL	13,124	99.97	56	4.39	0.0	0.000
Birmingham, AL	108,546	99.98	403	3.84	5.5	0.018-
Dobhan, AL	12,690	99.94	48	3.85	0.0	0.000
Florence, AL	16,687	99.97	59	3.55	15.9	0.062
Gadsden, AL	14,295	99.97	57	4.10	0.0	0.000
Huntsville, AL	17,137	99.96	71	4.21	0.0	0.000
Mobile, AL	50,513	99.96	228	4.51	5.0	0.020
Montgomery, AL	29,832	99.97	108	3.78	0.0	0.000
Tuscaloosa, AL	13,604	99.99	49	3.68	0.0	0.000
Mississippi	290,157	99.98	1,157	3.95	10.0	0.036
Biloxi-Gulfport, MS	18,079	99.97	59	3.20	17.3	0.059
Jackson, MS	35,305	99.98	151	4.37	0.0	0.000
Pascagoula, MS	8,556	99.88	34	3.87	0.0	0.000
West South Central	2,584,974	99.74	10,530	4.01+	11.2	0.043
Arkansas	321,739	99.96	1,340	4.02	7.0	0.027
Fayetteville, AR	11,803	99.95	46	3.81	0.0	0.000
Fort Smith, AR-OK	21,413	99.98	88	4.10	10.6	0.047
Little Rock, AR	50,966	99.99	181	3.64	13.3	0.040
Pine Bluff, AR	11,012	99.98	43	3.84	0.0	0.000
Louisiana	415,968	99.98	1,610	3.86	14.0	0.050
Alexandria, LA	13,819	99.96	54	3.93	0.0	0.000
Baton Rouge, LA	39,583	99.97	157	4.00	15.0	0.053
Houma-Thibodaux, LA	13,501	100.00	44	3.25	71.6	0.245
Lafayette, LA	14,620	99.99	60	4.17	35.1	0.141
Lake Charles, LA	16,436	99.98	68	4.07	0.0	0.000
Monroe, LA	14,648	99.99	50	3.46	0.0	0.000
New Orleans, LA	118,708	99.98	443	3.85	11.2	0.043
Shreveport, LA	36,822	99.98	146	4.04	6.8	0.026
Oklahoma	378,716	99.02	1,587	4.16+	10.0	0.038
Enid, OK	8,215	99.94	97	4.54	0.0	0.000
Lawton, OK	8,221	99.99	31	3.73	0.0	0.000
Oklahoma City, OK	88,646	97.45	388	4.50+	10.6	0.044
Tulsa, OK	71,032	98.13	307	4.43	12.0	0.042

See notes at end of table.



Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Texas	1,468,551	99.81	5,993	4.02+	11.7	0.047
Abilene, TX	13,100	99.96	41	3.18	0.0	0.000
Amarillo, TX	19,063	99.97	83	4.43	38.6	0.164
Austin, TX	47,578	99.95	216	4.53	4.5	0.021
Beaumont, TX	42,323	99.98	192	4.47	14.6	0.048
Brazoria, TX	12,486	99.78	62	4.84	19.2	0.089
Brownsville, TX	20,169	99.86	68	3.01	0.0	0.000
Bryan, TX	6,955	99.96	29	4.15	25.0	0.141
Corpus Christi, TX	28,417	95.56	116	3.97	19.4	0.073
Dallas, TX	172,118	99.95	655	3.96	12.8	0.048
El Paso, TX	37,292	99.94	122	3.09	0.0	0.000
Fort Worth, TX	97,947	99.96	373	3.90	10.6	0.042
Galveston, TX	19,376	99.94	87	4.39	13.4	0.055
Houston, TX	187,992	99.85	770	4.13	9.3	0.039
Killeen-Temple, TX	17,182	99.97	83	4.75	17.1	0.058
Laredo, TX	8,421	99.99	39	4.33	0.0	0.000
Longview, TX	20,547	99.98	76	3.74	36.4	0.144
Lubbock, TX	18,957	99.97	83	4.31	0.0	0.000
McAllen, TX	27,402	99.82	135	4.30	7.0	0.037
Midland, TX	7,362	99.96	49	6.61	20.7	0.147
Odessa, TX	9,207	99.99	19	2.02	0.0	0.000
San Angelo, TX	11,213	99.99	40	3.54	0.0	0.000
San Antonio, TX	107,989	99.98	441	4.05	4.7	0.018-
Sherman-Denison, TX	14,532	99.99	69	4.77	16.0	0.067
Texasarkana, TX-AR	15,315	99.99	59	3.85	21.2	0.063
Tyler, TX	18,223	99.98	78	4.24	14.3	0.056
Victoria, TX	6,871	99.97	33	4.61	0.0	0.000
Waco, TX	23,624	99.99	87	3.73	37.7	0.124
Wichita Falls, TX	14,462	99.97	59	4.18	0.0	0.000
West	4,539,951	93.08	11,454	2.44-	10.6	0.028-
Mountain	1,200,638	94.36	4,840	3.84+	9.6	0.040
Montana	97,248	99.90	488	4.70+	16.7	0.082
Billings, MT	12,097	99.88	67	5.39	0.0	0.000
Great Falls, MT	9,076	99.91	51	5.40	0.0	0.000
Idaho	109,822	99.77	409	3.44	9.6	0.037
Boise City, ID	18,471	99.90	62	3.29	0.0	0.000
Wyoming	42,408	99.91	231	5.18+	4.4	0.023
Casper, WY	5,379	99.91	34	6.31	0.0	0.000
Cheyenne, WY	6,886	99.96	27	3.85	0.0	0.000

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	751	2.78-	8.5	0.026
Boulder-Longmont, CO	15,143	97.96	37	2.51	0.0	0.000
Colorado Springs, CO	24,899	95.03	71	2.87	0.0	0.000
Denver, CO	119,624	94.10	319	2.73-	8.6	0.025
Fort Collins, CO	15,089	99.71	52	3.34	21.5	0.065
Greeley, CO	11,610	99.62	38	3.13	45.1	0.169
Pueblo, CO	15,372	94.43	31	1.96-	0.0	0.000
New Mexico	125,371	92.49	436	3.28	9.4	0.032
Albuquerque, NM	33,783	81.01	61	1.85-	34.9	0.062
Las Cruces, NM	9,375	99.94	48	4.68	0.0	0.000
Santa Fe, NM	8,454	93.66	38	4.32	0.0	0.000
Arizona	348,748	91.33	1,601	4.36+	7.5	0.036
Phoenix, AZ	187,381	86.74	908	4.75+	8.8	0.045
Tucson, AZ	70,550	96.06	306	4.17	5.8	0.029
Utah	128,579	99.92	692	5.12+	8.4	0.047
Provo-Orem, UT	16,076	99.93	112	6.53+	7.2	0.064
Salt Lake City, UT	77,243	99.94	362	4.56+	8.3	0.039
Nevada	81,799	86.15	232	2.62-	25.3	0.071
Las Vegas, NV	45,252	82.98	116	2.39-	11.0	0.026
Reno, NV	19,133	89.17	63	3.08	44.1	0.176
Pacific	3,339,313	92.62	6,614	1.93-	11.2	0.024-
Washington	461,706	92.41	798	1.67-	19.2	0.034
Bellingham, WA	13,629	99.51	22	1.56-	47.5	0.071
Bremerton, WA	15,439	96.59	22	1.39-	64.3	0.065
Olympia, WA	14,254	90.98	32	2.20	0.0	0.000
Richland, WA	12,559	99.85	26	1.95-	0.0	0.000
Seattle, WA	159,828	86.57	241	1.51-	26.0	0.037
Spokane, WA	41,237	94.51	73	1.76-	37.7	0.070
Tacoma, WA	50,245	97.24	78	1.51-	9.9	0.019
Vancouver, WA	17,048	80.32	30	1.75-	0.0	0.000
Yakima, WA	22,738	99.74	35	1.45-	0.0	0.000
Oregon	303,778	86.84	679	2.16-	9.3	0.023
Eugene, OR	28,947	88.67	61	2.03-	12.7	0.035
Medford, OR	20,326	99.78	30	1.37-	0.0	0.000
Portland, OR	99,155	72.79	224	2.37-	8.9	0.019-
Salem, OR	33,249	90.39	75	2.19-	19.7	0.057

See notes at end of table.

Table 3. Repair of inguinal hernia: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	4,979	1.97-	9.8	0.022-
Anaheim-Santa Ana, CA	167,171	89.39	346	2.15-	9.7	0.023
Bakersfield, CA	44,969	99.76	96	1.99-	34.1	0.070
Chico, CA	27,102	99.09	49	1.67-	0.0	0.000
Fresno, CA	58,425	99.90	112	1.82-	0.0	0.000
Los Angeles, CA	677,939	91.40	1,457	2.18-	9.9	0.025-
Merced, CA	13,462	99.86	33	2.29	75.5	0.156
Modesto, CA	33,619	98.80	73	2.10-	0.0	0.000
Oakland, CA	188,258	99.08	346	1.83-	10.1	0.021
Oxnard-Ventura, CA	49,488	93.74	110	2.18-	8.1	0.021
Redding, CA	17,796	99.73	33	1.72-	0.0	0.000
Riverside, CA	203,246	90.92	362	1.71-	8.0	0.014-
Sacramento, CA	120,273	91.81	194	1.56-	0.0	0.000
Salinas, CA	29,131	99.86	68	2.22-	0.0	0.000
San Diego, CA	205,402	91.35	430	2.04-	9.9	0.025
San Francisco, CA	163,753	89.02	296	1.80-	14.4	0.029
San Jose, CA	105,258	99.50	200	1.90-	4.6	0.009
Santa Barbara, CA	38,021	99.70	100	2.55-	8.1	0.025
Santa Cruz, CA	24,640	99.77	40	1.58-	0.0	0.000
Santa Rosa, CA	44,775	99.49	65	1.41-	0.0	0.000
Stockton, CA	40,855	91.54	73	1.64-	20.1	0.047
Vallejo, CA	35,778	98.59	63	1.68-	25.8	0.055
Visalia, CA	28,811	99.91	69	2.22-	19.3	0.034
Yuba City, CA	11,835	99.35	40	3.11	0.0	0.000
Alaska	16,348	99.78	28	1.52-	77.1	0.141
Anchorage, AK	5,625	99.75	4	0.68-	161.8	0.228
Hawaii	80,233	83.64	130	1.36-	23.6	0.025
Honolulu, HI	57,680	83.31	97	1.45-	14.8	0.018

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.





# Prostatectomy

In 1986, 243,560 prostatectomies were performed on elderly Medicare men, for a rate of 22.9 operations per 1,000 male enrollees. The 30-day post-admission death rate per 1,000 discharges was 13.0, or 1.3 percent. The 30-day post-admission death rate per 1,000 male enrollees was 0.296, or almost 0.03 percent.

## Age patterns

The discharge rate for prostatectomy was 64 percent greater for men aged 75–84 years (30.95) than for those aged 65–74 years (18.92). The rate for men 85 years of age or over (29.08) was slightly less than that for men 75–84 years (Table 1). The 30-day post-admission death rate, however, was more than five times greater for the oldest age group than for the youngest age group (37.7 deaths versus 7.1 deaths per 1,000 discharges).

## Patterns by race

White men had slightly higher discharge rates for prostatectomy than black men in all age groups. In the group 85 years of age or over, the difference was more pronounced (29.79 per 1,000 for white men versus 25.45 for black men, a 17-percent difference). The difference by race was much less than that seen for the other procedures covered in this volume, where black persons had considerably lower rates. Studies have

indicated that there is a higher rate of cancer of the prostate among black men than among white men (National Institutes of Health, 1982).

The overall 30-day post-admission death rates were slightly lower for white men than for black men (13.0 versus 14.5 per 1,000 discharges, or 0.300 versus 0.315 per 1,000 enrollees). The age-specific 30-day post-admission death rates per 1,000 discharges for the two youngest age groups were lower for white men than for black men (6.9 versus 10.1 and 16.4 versus 16.8 deaths per 1,000 discharges, respectively), but the reverse was true for the oldest age group (38.2 versus 32.5).

For many diagnoses and procedures reviewed in this study of Medicare hospital use, 30-day post-admission death rates were lower in those race or sex groups with the highest rates of operation or admission. This is consistent with the hypothesis that the higher the rate of admission the less acute the problem or the less severely ill the patient. As noted earlier, this pattern held true for prostatectomy for the age groups 65–74 years and 75–84 years. Among men 85 years of age or over, however, the rate of this procedure, as well as the 30-day post-admission death rate per 1,000 discharges, was greater for white men than for black men.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by

geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

There was no clear geographic pattern in the discharge rate for prostatectomy, except for the consistently low rates in the New England Division and New York (Figure 1). The rate for prostatectomies ranged from a low of 15.56 discharges per 1,000 enrollees in Alaska and 17.54 in New Hampshire to a high of 28.14 in South Dakota.

The range in the distribution of discharge rates for MSAs and rural areas is shown in the boxplots in Figure 2. The census divisions with the lowest median discharge rates were New England, the Middle Atlantic, and the Pacific. There was generally little difference within each State in the discharge rates between rural and metropolitan counties (Table 2).

## Post-admission death rates

The 30-day post-admission deaths per 1,000 discharges were lowest in the Mountain and New England Divisions, 11.5 and 11.4 deaths per 1,000 discharges, respectively, and highest in the West South Central, East South Central, and South Atlantic, 15.0, 13.9, and 13.8 deaths per

1,000 discharges, respectively. A Pearson correlation coefficient between the discharge rate per 1,000 enrollees and the 30-day post-admission death rate per 1,000 discharges, using the MSA and rural area rates, was 0.12, which indicates little or no relationship between the two rates.

There was more than a twofold difference between the 30-day post-admission death rate for the State with the highest rate and the State with the lowest rate. Delaware had the highest 30-day post admission death rate (24.1 per 1,000 discharges), and the District of Columbia and North Dakota had the lowest rates (3.8 and 6.9 deaths per 1,000 discharges, respectively).

## Urban-rural patterns

In the United States as a whole, the discharge rate for prostatectomy was virtually the same for rural areas as for all MSAs combined. In the U.S. regions, the discharge rates for rural areas were very similar to the rates for the MSAs combined.

As a whole, the U.S. 30-day post-admission death rate per 1,000 discharges for prostatectomy was moderately higher for rural areas than for the MSAs combined. This reflects a significantly higher rural rate in the Northeast Region (26 percent higher than the MSAs combined), a moderately higher rural rate in the South Region (11 percent higher than the MSAs combined), a slightly higher rural rate in the North Central Region (6 percent higher than the MSAs combined), and a moderately lower rural rate in the West Region (11 percent lower than the MSAs combined).

## Reference

National Institutes of Health: *Cancer Mortality in the United States: 1950-1977*. National Cancer Monograph 59. NIH Pub. No. 82-2435. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1982.



Table 1. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

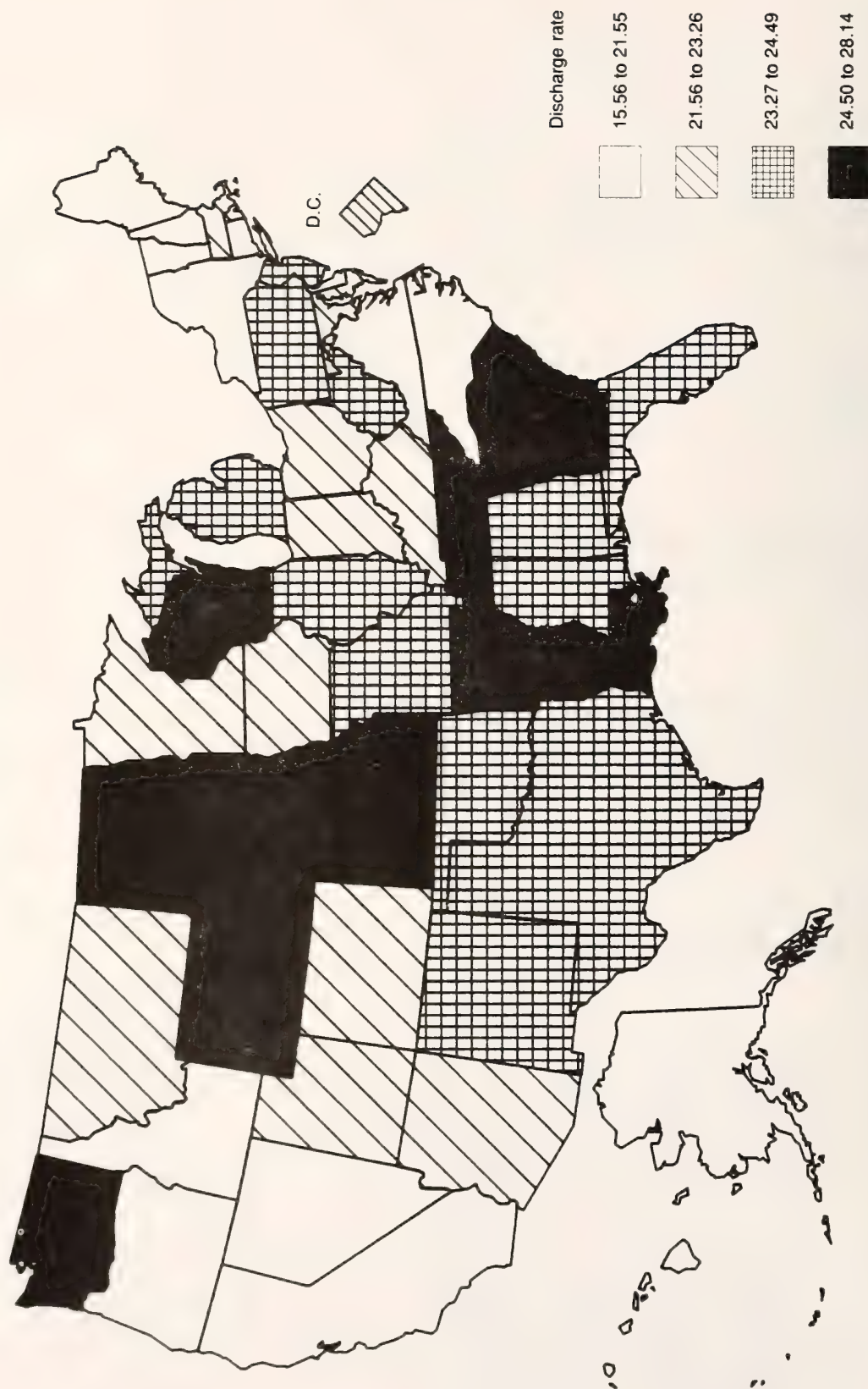
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All men (1)	10,650,991	96.01	243,560	22.87	13.0	0.296
65-74 years	7,056,445	95.90	133,571	18.92	7.1	0.135
75-84 years	2,912,366	96.02	90,145	30.95	16.2	0.500
85 years or over	682,180	97.22	19,844	29.08	37.7	1.096
White men	9,391,016	95.94	216,929	23.09	13.0	0.300
65-74 years	6,216,472	95.83	118,603	19.07	6.9	0.132
75-84 years	2,573,989	95.94	80,429	31.24	16.4	0.511
85 years or over	600,555	97.12	17,897	29.79	38.2	1.138
Black men	792,788	97.49	17,302	21.82	14.5	0.315
65-74 years	519,305	97.28	9,438	18.17	10.1	0.182
75-84 years	215,401	97.67	6,384	29.63	16.8	0.496
85 years or over	58,082	98.74	1,480	25.45	32.5	0.826

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

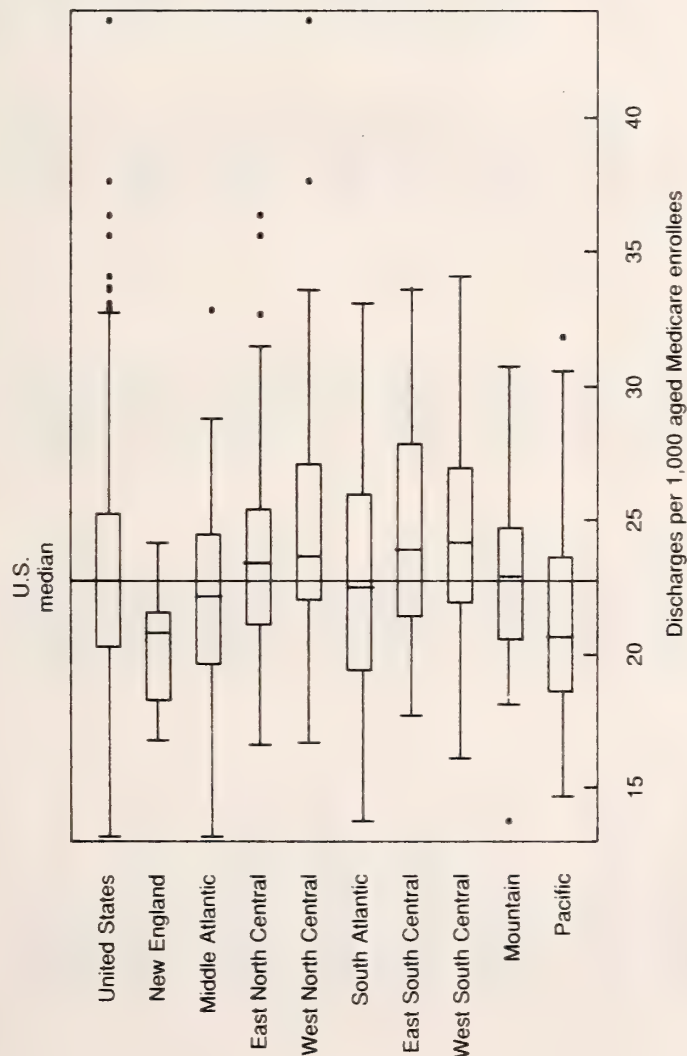
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Prostatectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Prostatectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Sharon, PA	32.97
	Beaumont, TX	32.98
	Athens, GA	33.14
	Sioux City, IA-NE	33.62
	Dothan, AL	33.76
	Victoria, TX	34.01
	Springfield, IL	35.56
	Elkhart-Goshen, IN	36.43
	Rapid City, SD	37.77
	Bismarck, ND	43.64
Middle Atlantic	Sharon, PA	32.97
East North Central	Racine, WI	32.72
	Springfield, IL	35.56
	Elkhart-Goshen, IN	36.43
West North Central	Rapid City, SD	37.77
	Bismarck, ND	43.64
Mountain	Greeley, CO	13.83
Pacific	Bellingham, WA	31.93

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, state, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	10,650,991	96.01	243,560	22.87	13.0	0.296
Metropolitan	7,607,442	94.88	173,227	22.84	12.6	0.287
Rural	3,043,549	98.98	70,333	22.94	13.9	0.316
Northeast	2,432,284	97.52	53,419	21.98-	12.5	0.277
Metropolitan	2,142,395	97.24	47,217	22.07-	12.1	0.270
Rural	289,889	99.60	6,202	21.36-	15.3	0.334
New England	600,599	95.19	12,462	20.77-	11.4	0.242-
Metropolitan	508,035	94.46	10,588	20.88-	10.8	0.231-
Rural	92,564	99.42	1,874	20.17-	14.5	0.300
Maine	61,227	99.85	1,191	19.35-	13.3	0.271
Metropolitan	31,988	99.85	599	18.67-	6.3	0.123-
Rural	29,239	99.84	592	20.09	20.1	0.431
New Hampshire	45,509	98.79	795	17.54-	7.4	0.133-
Metropolitan	28,707	98.26	501	17.55-	7.9	0.142
Rural	16,802	99.70	294	17.51-	6.8	0.121
Vermont	25,123	99.80	472	18.75-	16.8	0.317
Metropolitan	3,953	99.90	78	19.75	0.0	0.000
Rural	21,170	99.78	394	18.57-	20.4	0.375
Massachusetts	262,650	91.91	5,792	22.01	11.8	0.264
Metropolitan	242,051	91.41	5,300	21.86	12.0	0.266
Rural	20,599	98.24	492	23.81	10.2	0.243
Rhode Island	50,102	96.91	1,150	23.02	13.6	0.320
Metropolitan	50,102	96.91	1,150	23.02	13.6	0.320
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	155,988	96.95	3,062	19.77-	9.0	0.183-
Metropolitan	151,234	96.87	2,960	19.71-	9.4	0.189-
Rural	4,754	99.50	102	21.50	0.0	0.000
Middle Atlantic	1,831,685	98.31	40,957	22.38-	12.8	0.290
Metropolitan	1,634,360	98.14	36,629	22.44	12.5	0.282
Rural	197,325	99.68	4,328	21.92	15.6	0.350
New York	826,711	98.73	17,642	21.21-	11.7	0.250
Metropolitan	737,245	98.62	15,703	21.17-	11.5	0.245-
Rural	89,466	99.68	1,939	21.56	13.1	0.295

See notes at end of table.

Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Jersey	360,170	97.28	8,371	23.43	13.2	0.314
Metropolitan	360,170	97.28	8,371	23.43	13.2	0.314
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	644,804	98.34	14,944	23.32	14.1	0.329
Metropolitan	536,945	98.07	12,555	23.54	13.4	0.316
Rural	107,859	99.69	2,389	22.23	17.7	0.396
North Central	2,727,008	95.72	64,787	23.66+	12.6	0.298
Metropolitan	1,698,155	94.29	40,103	23.69+	12.3	0.292
Rural	1,028,853	98.18	24,684	23.60+	13.0	0.308
East North Central	1,876,737	97.30	43,543	23.25	12.9	0.302
Metropolitan	1,345,284	96.51	31,349	23.44+	12.1	0.285
Rural	531,453	99.34	12,194	22.78	14.8	0.342
Ohio	498,375	99.32	11,092	22.42	12.4	0.280
Metropolitan	386,108	99.51	8,726	22.83	11.9	0.274
Rural	112,268	98.65	2,366	21.03-	14.2	0.298
Indiana	244,440	97.58	5,442	22.31	13.2	0.296
Metropolitan	155,008	96.61	3,461	22.45	10.8	0.242
Rural	89,432	99.29	1,981	22.06	17.3	0.386
Illinois	491,223	95.02	11,504	23.41	14.7	0.351
Metropolitan	367,209	93.56	8,474	23.18	14.3	0.337
Rural	124,014	99.61	3,030	24.05	15.9	0.389
Michigan	394,516	96.19	9,308	23.76	11.1	0.262
Metropolitan	292,317	95.13	6,938	23.93	10.4	0.244
Rural	102,199	99.33	2,370	23.26	13.0	0.309
Wisconsin	248,182	99.52	6,197	24.71+	12.8	0.317
Metropolitan	144,642	99.29	3,750	25.75+	12.1	0.309
Rural	103,540	99.84	2,447	23.26	13.9	0.328
West North Central	850,271	92.42	21,244	24.54+	11.9	0.291
Metropolitan	352,871	86.69	8,754	24.65+	12.7	0.316
Rural	497,400	96.96	12,490	24.46+	11.4	0.274
Minnesota	154,065	74.10	3,502	22.31	9.8	0.217
Metropolitan	66,122	61.43	1,511	22.68	11.1	0.253
Rural	87,943	87.70	1,991	22.04	8.8	0.192

See notes at end of table.

Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Iowa	159,713	99.24	3,779	23.26	12.8	0.297
	52,352	97.82	1,258	23.95	12.3	0.298
	107,361	99.95	2,521	22.93	13.0	0.296
Missouri	255,929	97.79	6,289	24.24+	12.8	0.317
	143,384	96.24	3,552	24.56+	14.3	0.358
	112,545	99.83	2,737	23.84	10.9	0.265
North Dakota	36,603	97.71	985	26.27+	6.9	0.174
	9,155	97.44	276	29.75+	0.0	0.000
	27,448	97.81	709	25.13	9.6	0.230
South Dakota	40,015	99.48	1,150	28.14+	13.1	0.363
	8,159	99.93	235	28.70	7.9	0.239
	31,856	99.36	915	27.99+	14.5	0.392
Nebraska	83,563	98.31	2,191	25.57+	12.1	0.303
	26,269	95.04	606	22.93	11.0	0.257
	57,294	99.89	1,585	26.75+	12.6	0.321
Kansas	120,383	94.95	3,348	27.27+	12.5	0.330
	47,430	91.76	1,316	27.73+	15.5	0.415
	72,953	97.14	2,032	26.98+	10.7	0.280
South	3,599,261	97.36	84,853	23.59+	14.2	0.330+
	2,279,677	95.96	54,264	23.89+	13.6	0.321
	1,319,584	99.89	30,589	23.07	15.1+	0.345+
South Atlantic	1,868,529	95.27	42,801	23.02	13.8	0.313
	1,316,298	93.49	30,970	23.60+	13.9	0.324
	552,231	99.78	11,831	21.63-	13.4	0.287
Delaware	28,299	99.92	554	20.01	24.1	0.456
	17,494	99.91	324	18.94	21.2	0.367
	10,805	99.93	230	21.74	27.9	0.599
Maryland	172,203	99.39	3,830	22.59	13.1	0.306
	155,063	99.32	3,537	23.19	13.4	0.321
	17,140	99.95	293	17.17-	9.7	0.178
District of Col.	24,185	99.68	551	22.56	3.8-	0.077-
	24,185	99.68	551	22.56	3.8-	0.077-
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.



Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	223,345	99.88	4,497	20.43-	12.0	0.249
	137,257	99.84	2,699	20.07-	10.7	0.217
	86,088	99.96	1,798	20.98	13.9	0.295
West Virginia	97,672	98.86	2,288	23.39	14.8	0.345
	35,309	97.02	849	24.13	13.0	0.315
	62,363	99.93	1,439	22.97	15.8	0.360
North Carolina	268,280	99.91	5,415	20.49-	18.8+	0.379
	132,672	99.87	2,738	20.95-	19.1	0.393
	135,608	99.95	2,677	20.05-	18.5	0.367
South Carolina	128,764	99.34	3,077	24.50	15.1	0.366
	72,454	98.87	1,824	25.84+	17.1	0.443
	56,310	99.94	1,253	22.78	12.2	0.270
Georgia	215,162	99.62	5,252	24.73+	11.7	0.285
	118,103	99.40	3,099	26.73+	14.3	0.382
	97,059	99.89	2,153	22.33	7.8-	0.170-
Florida	710,619	88.94	17,337	24.16+	13.1	0.309
	623,761	87.70	15,349	24.31+	13.5	0.321
	86,858	98.97	1,988	23.10	9.8	0.219
East South Central	683,941	99.78	16,259	23.67+	13.9	0.323
	338,466	99.61	8,074	23.95+	11.8	0.276
	345,475	99.96	8,185	23.41	15.8	0.367
Kentucky	168,403	99.65	3,697	21.85	14.9	0.332
	69,679	99.22	1,504	21.64	15.7	0.347
	98,724	99.95	2,193	21.99	14.3	0.322
Tennessee	217,539	99.64	5,424	24.91+	14.8	0.359
	132,402	99.44	3,378	25.57+	13.4	0.328
	85,137	99.95	2,046	23.90	17.0	0.406
Alabama	182,178	99.96	4,359	23.92	12.1	0.280
	109,757	99.96	2,579	23.64	8.6	0.197
	72,421	99.96	1,780	24.33	17.0	0.401
Mississippi	115,821	99.98	2,779	23.63	13.5	0.310
	26,628	99.97	613	23.19	6.5	0.153
	89,193	99.98	2,166	23.75	15.4	0.352

See notes at end of table.

Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
West South Central	1,046,791	99.69	25,793	24.54+	15.0	0.362+	15.0	0.362+
Metropolitan	624,913	99.51	15,220	24.48+	14.0	0.338	14.0	0.338
Rural	421,878	99.96	10,573	24.63+	16.4+	0.396+	16.4+	0.396+
Arkansas	133,010	99.94	3,345	24.88+	15.5	0.392	15.5	0.392
Metropolitan	39,773	99.97	962	24.12	14.2	0.346	14.2	0.346
Rural	93,237	99.93	2,383	25.20+	15.9	0.412	15.9	0.412
Louisiana	166,324	99.98	4,171	25.03+	14.3	0.341	14.3	0.341
Metropolitan	105,093	99.98	2,607	24.97+	12.4	0.300	12.4	0.300
Rural	61,231	99.99	1,564	25.13	17.2	0.405	17.2	0.405
Oklahoma	150,928	98.89	3,745	24.49+	18.2	0.437+	18.2	0.437+
Metropolitan	69,730	97.68	1,722	24.63	14.1	0.339	14.1	0.339
Rural	81,198	99.96	2,023	24.37	21.4+	0.516+	21.4+	0.516+
Texas	596,529	99.76	14,532	24.35+	14.2	0.342	14.2	0.342
Metropolitan	410,317	99.67	9,929	24.37+	14.4	0.347	14.4	0.347
Rural	186,212	99.97	4,603	24.29+	14.0	0.332	14.0	0.332
West	1,892,438	92.16	40,501	21.51-	11.8	0.250-	11.8	0.250-
Metropolitan	1,487,215	90.76	31,643	21.39-	12.1	0.256-	12.1	0.256-
Rural	405,223	97.66	8,858	21.97	10.8	0.230-	10.8	0.230-
Mountain	512,714	93.69	11,524	22.66	11.5	0.253	11.5	0.253
Metropolitan	297,573	90.91	6,645	22.59	11.8	0.259	11.8	0.259
Rural	215,141	97.82	4,879	22.75	11.2	0.245	11.2	0.245
Montana	42,164	99.91	976	23.17	11.7	0.261	11.7	0.261
Metropolitan	8,852	99.90	215	24.48	14.7	0.349	14.7	0.349
Rural	33,312	99.91	761	22.82	10.9	0.239	10.9	0.239
Idaho	48,393	99.73	984	20.37-	11.8	0.230	11.8	0.230
Metropolitan	7,614	99.90	155	20.57	0.0	0.000	0.0	0.000
Rural	40,779	99.70	829	20.33	13.9	0.271	13.9	0.271
Wyoming	18,050	99.89	486	27.00	10.8	0.277	10.8	0.277
Metropolitan	5,013	99.94	117	23.64	0.0	0.000	0.0	0.000
Rural	13,037	99.87	369	28.27	14.4	0.377	14.4	0.377
Colorado	108,397	93.94	2,398	22.22	10.3	0.222	10.3	0.222
Metropolitan	80,130	94.33	1,770	22.28	9.3	0.203	9.3	0.203
Rural	28,267	92.86	628	22.04	13.0	0.273	13.0	0.273

See notes at end of table.

Table 2. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	53,882	91.35	1,264	23.52	12.3	0.280
Metropolitan	21,057	83.26	448	21.62	9.3	0.198
Rural	32,825	97.41	816	24.71	14.0	0.329
Arizona	149,935	90.50	3,381	22.82	8.9	0.197-
Metropolitan	106,865	87.75	2,403	22.64	11.4	0.252
Rural	43,070	98.14	978	23.25	2.3-	0.051-
Utah	54,655	99.91	1,266	23.18	18.0	0.388
Metropolitan	38,958	99.93	915	23.59	16.7	0.367
Rural	15,697	99.85	351	22.17	21.1	0.437
Nevada	37,238	85.20	769	21.55	15.9	0.348
Metropolitan	29,084	83.54	622	22.37	19.8	0.449
Rural	8,154	91.70	147	18.65	0.0	0.000
Pacific	1,379,724	91.60	28,977	21.09-	11.9	0.250-
Metropolitan	1,189,642	90.73	24,998	21.09-	12.1	0.255-
Rural	190,082	97.48	3,979	21.08-	10.3	0.212
Washington	192,205	91.47	4,797	25.09+	11.1	0.274
Metropolitan	141,239	89.62	3,558	25.33+	10.7	0.273
Rural	50,966	97.01	1,239	24.41	12.1	0.279
Oregon	126,873	85.88	2,729	21.55	10.3	0.221
Metropolitan	71,779	78.22	1,526	21.19	9.7	0.203
Rural	55,094	98.44	1,203	22.02	11.2	0.244
California	1,013,000	92.65	20,629	20.44-	12.4	0.251-
Metropolitan	946,080	92.20	19,392	20.57-	12.7	0.259
Rural	66,920	99.51	1,237	18.69-	7.6	0.141-
Alaska	7,848	99.76	117	15.56-	10.4	0.146
Metropolitan	2,522	99.68	41	17.43	0.0	0.000
Rural	5,326	99.79	76	14.70-	15.3	0.204
Hawaii	39,798	84.34	705	17.81-	10.5	0.182
Metropolitan	28,022	84.22	481	17.42-	10.9	0.190
Rural	11,776	84.62	224	18.72	9.5	0.164

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMC enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMC enrollees	Per 1,000 discharges	Per 1,000 non-HMC enrollees
United States	10,650,991	104.15	243,560	22.87	13.0	0.296
Northeast	2,432,284	102.54	53,419	21.98-	12.5	0.277
New England	600,599	105.05	12,462	20.77-	11.4	0.242
Maine	61,227	100.15	1,191	19.35-	13.3	0.271
Bangor, ME	6,383	100.17	107	16.75	7.9	0.154
Lewiston-Auburn, ME	5,085	100.10	116	22.71	17.4	0.386
Portland, ME	20,520	100.15	376	18.27-	2.6-	0.047-
New Hampshire	45,509	101.23	795	17.54-	7.4	0.133-
Manchester, NH	16,831	102.58	287	17.11-	10.4	0.179
Portsmouth, NH	11,876	100.62	214	18.18	4.5	0.087
Vermont	25,123	100.20	472	18.75-	16.8	0.317
Burlington, VT	3,953	100.10	78	19.75	0.0	0.000
Massachusetts	262,650	108.80	5,792	22.01	11.8	0.264
Boston, MA	156,580	105.99	3,396	21.60	12.3	0.272
New Bedford, MA	24,950	101.74	533	21.53	7.8	0.164
Pittsfield, MA	7,645	112.56	161	21.01	12.2	0.255
Springfield, MA	27,119	110.77	587	21.77	16.9	0.370
Worcester, MA	25,757	135.14	623	24.07	9.0	0.223
Rhode Island	50,102	103.19	1,150	23.02	13.6	0.320
Providence, RI	50,102	103.19	1,150	23.02	13.6	0.320
Connecticut	155,988	103.15	3,062	19.77-	9.0	0.183-
Bridgeport, CT	37,866	104.40	754	20.06	6.5	0.135-
Hartford, CT	62,544	101.17	1,308	21.08	12.1	0.261
New Haven, CT	39,699	106.15	671	16.96-	7.4	0.125-
New London, CT	11,125	100.41	227	20.72	9.1	0.187

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMC enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMC enrollees	Per 1,000 discharges	Per 1,000 non-HMC enrollees
Middle Atlantic	1,831,685	101.72	40,957	22.38-	12.8	0.290
New York	826,711	101.28	17,642	21.21-	11.7	0.250
Albany, NY	44,093	101.63	916	20.72	14.1	0.290
Binghamton, NY	13,848	100.06	238	17.27-	11.9	0.217
Buffalo, NY	51,757	101.67	952	18.64-	9.7	0.181
Elmira, NY	5,347	100.07	96	18.04	10.7	0.188
Glens Falls, NY	6,046	100.58	140	23.05	6.2	0.163
Nassau-Suffolk, NY	119,937	100.15	2,427	20.62-	10.3	0.220
New York, NY	374,055	100.58	8,412	22.02	12.5	0.271
Niagara Falls, NY	12,429	100.37	299	24.52	7.1	0.170
Orange County, NY	12,031	100.15	221	18.31	0.0	0.000
Poughkeepsie, NY	10,892	101.99	242	21.99	15.7	0.352
Rochester, NY	38,987	115.33	887	22.74	8.7	0.200
Syracuse, NY	29,535	100.12	492	16.80-	10.3	0.173
Utica-Rome, NY	18,288	100.13	381	20.99	12.5	0.276
New Jersey	360,170	102.80	8,371	23.43	13.2	0.314
Atlantic City, NJ	18,165	102.59	434	23.71	19.8	0.477
Bergen-Passaic, NJ	67,882	100.77	1,630	24.22	12.0	0.287
Jersey City, NJ	24,219	100.95	667	27.67+	13.6	0.377
Middlesex, NJ	36,785	106.52	792	22.26	20.6	0.459
Monmouth-Ocean, NJ	62,131	100.55	1,203	19.22-	10.4	0.193
Newark, NJ	81,698	100.77	2,123	26.12+	12.6	0.346
Trenton, NJ	14,831	103.70	416	28.42+	9.7	0.279
Vineland, NJ	6,538	104.80	93	14.35-	10.8	0.158
Pennsylvania	644,804	101.69	14,944	23.32	14.1	0.329
Allentown, PA-NJ	37,606	101.24	843	22.66	12.3	0.277
Altoona, PA	8,011	100.02	203	25.34	10.0	0.247
Beaver County, PA	11,354	100.06	320	28.85	10.2	0.287
Erie, PA	14,163	100.12	343	24.71	26.8	0.675
Harrisburg, PA	28,485	100.07	554	19.62-	11.4	0.217
Johnstown, PA	16,288	100.04	393	24.53	13.0	0.325
Lancaster, PA	19,090	100.09	412	21.39	7.1	0.151
Philadelphia PA-NJ	215,798	105.87	5,473	25.51+	12.1	0.309
Pittsburgh, PA	126,747	101.42	2,688	21.45	17.8	0.393
Reading, PA	19,466	100.17	474	24.26	28.1	0.666
Scranton, PA	46,336	100.06	871	18.95-	8.2	0.159
Sharon, PA	7,741	100.04	254	32.97+	16.0	0.531
State College, PA	4,078	100.02	53	13.05-	0.0	0.000
Williamsport, PA	6,629	100.02	159	23.88	0.0	0.000
York, PA	19,792	100.04	442	22.36	4.5-	0.102-

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	2,727,008	104.47	64,787	23.66+	12.6	0.298
East North Central	1,876,737	102.78	43,543	23.25	12.9	0.302
Ohio	498,376	100.69	11,092	22.42	12.4	0.280
Akron, OH	29,767	100.14	637	21.64	11.3	0.242
Canton, OH	20,907	100.05	342	16.55-	16.7	0.294
Cincinnati, OH-KY-IN	60,146	100.05	1,325	21.98	5.9-	0.132-
Cleveland, OH	94,596	100.34	2,220	23.82	14.5	0.354
Columbus, OH	46,431	100.33	1,083	23.53	14.9	0.353
Dayton, OH	40,915	100.06	984	24.34	14.8	0.356
Hamilton, OH	10,185	100.05	236	23.35	13.2	0.301
Lima, OH	7,728	100.03	145	18.89	28.6	0.520
Lorain-Elyria, OH	11,302	100.21	264	23.99	0.0	0.000
Mansfield, OH	6,087	100.02	135	22.46	0.0	0.000
Steubenville, OH-WV	8,880	102.02	262	29.92	15.0	0.474
Toledo, OH	27,184	100.06	584	21.50	8.6	0.184
Youngstown, OH	28,213	100.06	628	22.76	11.6	0.265
Indiana	244,440	102.48	5,442	22.31	13.2	0.296
Anderson, IN	6,631	100.21	181	27.27	5.7	0.153
Bloomington, IN	3,092	100.19	79	25.39	12.0	0.320
Elkhart-Goshen, IN	6,141	100.11	224	36.43+	8.9	0.318
Evansville, IN-KY	13,147	105.10	250	18.91	4.2	0.075-
Fort Wayne, IN	14,531	102.76	308	21.16	3.3-	0.067-
Gary-Hammond, IN	25,212	103.78	692	28.09+	8.0	0.216
Indianapolis, IN	44,980	107.36	897	20.07-	13.6	0.294
Kokomo, IN	4,213	100.07	70	16.73	13.5	0.242
Lafayette, IN	4,363	100.09	116	26.55	8.2	0.224
Muncie, IN	5,197	100.15	144	27.89	20.9	0.594
South Bend, IN	12,967	100.08	234	18.05-	4.2	0.077-
Terre Haute, IN	7,157	100.08	130	18.10	0.0	0.000
Illinois	491,223	105.24	11,504	23.41	14.7	0.351
Aurora-Elgin, IL	11,799	101.79	257	21.71	14.9	0.333
Bloomington, IL	4,811	100.08	111	22.76	27.7	0.594
Champaign, IL	5,164	100.10	102	19.90	0.0	0.000
Chicago, IL	232,772	109.43	5,405	23.38	13.7	0.329
Decatur, IL	6,108	100.03	150	24.51	13.3	0.322
Joliet, IL	11,051	103.94	294	26.89	7.3	0.187
Kankakee, IL	4,867	100.14	124	25.53	15.5	0.416
Lake County, IL	14,413	104.56	312	22.10	31.0	0.667
Peoria, IL	17,130	100.08	358	20.83	19.6	0.406
Rockford, IL	11,273	113.89	284	25.29	3.5-	0.088
Springfield, IL	9,017	100.06	323	35.56+	21.0	0.763

See notes at end of table.



Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths	
	Number	As percent of all enrollees		Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
Michigan	394,516	103.97	9,308	23.76	0.262
Ann Arbor, MI	6,765	105.88	174	25.83	0.294
Battle Creek, MI	6,626	100.18	154	23.28	0.302
Benton Harbor, MI	8,801	100.11	182	20.78	0.232
Detroit, MI	176,889	104.64	4,255	24.34+	0.198-
Flint, MI	16,395	113.44	372	22.75	0.370
Grand Rapids, MI	25,060	105.73	673	26.70	0.425
Jackson, MI	6,788	100.27	168	24.97	0.303
Kalamazoo, MI	8,170	100.12	188	23.09	0.498
Lansing, MI	12,332	113.43	273	22.15	0.160
Muskegon, MI	7,674	102.58	158	20.86	0.137
Saginaw, MI	16,817	104.77	341	20.48	0.248
Wisconsin	248,182	100.48	6,197	24.71+	0.317
Appleton, WI	13,889	100.05	350	24.94	0.278
Eau Claire, WI	6,984	100.10	142	20.01	0.541
Green Bay, WI	7,526	100.03	194	25.61	0.261
Janesville, WI	6,468	100.22	134	20.40	0.297
Kenosha, WI	5,735	100.14	135	23.51	0.346
LaCrosse, WI	4,496	100.11	86	18.80	0.209
Madison, WI	11,989	100.31	367	30.46+	0.325
Milwaukee, WI	64,037	101.01	1,664	25.86+	0.259
Racine, WI	8,141	100.14	266	32.72+	0.366
Sheboygan, WI	5,761	100.03	183	31.46	0.669
Wausau, WI	5,401	100.04	117	21.53	0.362
West North Central	850,271	108.21	21,244	24.54+	0.291
Minnesota	154,065	134.95	3,502	22.31	0.217
Duluth, MN-WI	11,333	137.67	236	20.83	0.258
Minneapolis, MN-WI	48,866	171.01	1,153	23.41	0.283
Rochester, MN	3,459	100.26	64	18.23	0.273
St. Cloud, MN	4,669	155.15	126	26.45	0.000
Iowa	159,713	100.76	3,779	23.26	0.297
Cedar Rapids, IA	7,505	100.05	176	23.41	0.000
Davenport, IA-IL	17,478	100.07	345	19.70	0.454
Des Moines, IA	14,787	107.51	314	21.25	0.333
Dubuque, IA	4,239	100.05	85	20.01	0.469

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Missouri	255,929	102.26	6,289	24.24+	12.8	0.317
Columbia, MO	3,336	100.06	91	27.15	0.0	0.000
Joplin, MO	7,453	100.07	183	24.38	21.9	0.532
Kansas City, MO-KS	58,721	105.41	1,640	27.80+	18.1	0.514
St. Joseph, MO	5,115	100.04	148	28.47	29.3	0.920
St. Louis, MO-IL	106,581	103.46	2,361	22.02	10.0	0.221
Springfield, MO	10,702	100.07	272	25.20	11.2	0.274
North Dakota	36,603	102.34	985	26.27+	6.9	0.174
Bismarck, ND	3,257	107.06	143	43.64+	0.0	0.000
Fargo, ND-MN	5,628	104.73	128	22.26	0.0	0.000
Grand Forks, ND	2,280	100.09	49	21.12	0.0	0.000
South Dakota	40,015	100.52	1,150	28.14+	13.1	0.363
Rapid City, SD	2,965	100.13	112	37.77+	8.0	0.340
Sioux Falls, SD	5,194	100.04	123	23.55	7.8	0.184
Nebraska	83,563	101.72	2,191	25.57+	12.1	0.303
Lincoln, NE	7,880	101.87	178	22.33	10.6	0.239
Omaha, NE-IA	21,780	105.79	497	22.75	9.7	0.224
Kansas	120,383	105.32	3,348	27.27+	12.5	0.330
Lawrence, KS	1,903	116.18	32	16.61	0.0	0.000
Topeka, KS	7,154	103.35	184	25.32	11.3	0.258
Wichita, KS	17,309	116.36	475	27.43	14.7	0.398
South	3,599,261	102.71	84,853	23.59+	14.2	0.330+
South Atlantic	1,868,529	104.97	42,801	23.02	13.8	0.313
Delaware	28,299	100.08	554	20.01	24.1	0.456
Wilmington, DE-NJ-MD	23,283	100.48	483	21.19	18.6	0.367
Maryland	172,203	100.62	3,830	22.59	13.1	0.306
Baltimore, MD	95,798	100.13	2,241	23.75	11.8	0.286
Cumberland, MD-WV	6,619	100.06	113	17.12	26.3	0.462
Hagerstown, MD	5,749	100.03	108	18.91	17.1	0.352
District of Col.	24,185	100.32	551	22.56	3.8-	0.077-
Washington, DC-MD-VA	100,864	101.17	2,084	21.06-	10.0	0.209

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	223,345	100.12	4,497	20.43-	12.0	0.249
Charlottesville, VA	4,783	100.13	86	17.96	12.9	0.209
Danville, VA	6,075	100.00	113	18.75	16.7	0.338
Lynchburg, VA	6,891	100.00	125	18.07	23.9	0.430
Norfolk, VA	40,076	100.06	793	20.37	9.2	0.192
Richmond, VA	32,386	100.03	795	24.98	13.8	0.360
Roanoke, VA	11,435	100.02	203	17.65-	0.0	0.000
West Virginia	97,672	101.15	2,288	23.39	14.8	0.345
Charleston, WV	13,538	100.05	293	21.86	6.9	0.153
Huntington, WV-KY-OH	16,218	100.04	388	23.83	19.1	0.481
Parkersburg, WV-OH	7,782	100.12	224	28.58	16.7	0.496
Wheeling, WV-OH	8,152	126.24	216	26.49	12.9	0.364
North Carolina	268,280	100.09	5,415	20.49-	18.8+	0.379
Asheville, NC	9,475	100.12	203	21.33	10.5	0.206
Burlington, NC	5,631	100.02	83	15.05-	13.5	0.192
Charlotte, NC	41,748	100.27	780	18.99-	20.3	0.387
Fayetteville, NC	5,197	100.02	123	24.65	20.1	0.447
Greensboro, NC	38,079	100.04	974	25.89	24.1	0.609
Hickory, NC	9,150	100.03	189	21.09	16.7	0.359
Jacksonville, NC	2,066	100.15	27	13.74	0.0	0.000
Raleigh-Durham, NC	21,095	100.16	387	18.56-	5.2	0.098-
Wilmington, NC	4,824	100.02	92	19.77	40.3	0.705
South Carolina	128,764	100.67	3,077	24.50	15.1	0.366
Anderson, SC	6,404	100.42	185	29.41	10.1	0.339
Charleston, SC	13,479	101.30	365	27.93	25.9	0.666
Columbia, SC	13,686	100.03	255	19.25	8.4	0.163
Florence, SC	4,204	100.07	114	27.95	27.2	0.791
Greenville, SC	25,256	102.42	674	27.17+	17.5	0.473
Georgia	215,162	100.38	5,252	24.73+	11.7	0.285
Albany, GA	3,543	100.11	99	28.78	24.9	0.630
Athens, GA	5,091	100.04	168	33.14+	12.3	0.405
Atlanta, GA	71,044	100.95	2,067	29.58+	14.9	0.435
Augusta, GA-SC	12,787	100.08	204	16.40-	10.5	0.172
Columbus, GA-AL	8,733	100.03	237	27.98	13.3	0.384
Macon, GA	9,599	100.06	178	19.03	18.2	0.345
Savannah, GA	9,851	100.08	240	24.83	13.2	0.329

See notes at end of table.



Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	710,619	112.43	17,337	24.16+	13.1	0.309
Bradenton, FL	17,962	100.42	306	16.64-	6.3	0.103
Daytona Beach, FL	26,225	109.42	732	27.70+	9.8	0.261
Fort Lauderdale, FL	70,727	130.99	1,745	23.51	15.2	0.348
Fort Myers, FL	28,010	100.42	804	29.01+	15.6	0.419
Fort Pierce, FL	18,697	101.02	490	26.51	2.2-	0.057-
FT. Walton Beach, FL	4,487	100.11	111	26.15	0.0	0.000
Gainesville, FL	7,015	100.58	139	19.98	7.6	0.147
Jacksonville, FL	32,023	102.15	677	21.50	9.3	0.199
Lakeland, FL	23,886	100.57	582	24.49	21.1	0.520
Melbourne, FL	20,747	100.36	453	22.44	5.0	0.108-
Miami-Hialeah, FL	64,401	135.49	1,497	22.32	17.1	0.367
Naples, FL	11,047	100.33	247	22.56	4.1	0.097
Ocala, FL	14,498	100.64	347	24.60	12.6	0.310
Orlando, FL	37,259	101.70	1,014	27.61+	18.4	0.506
Panama City, FL	5,023	100.36	95	19.38	0.0	0.000
Pensacola, FL	12,197	100.13	237	19.90	18.6	0.357
Sarasota, FL	33,943	100.23	929	26.87+	10.4	0.283
Tallahassee, FL	6,908	102.90	133	19.40	29.1	0.595
Tampa, FL	130,531	119.47	3,431	25.81+	15.2	0.383
West Palm Beach, FL	58,175	121.28	1,380	23.17	10.8	0.244
East South Central	683,941	100.22	16,259	23.67+	13.9	0.323
Kentucky	168,403	100.36	3,697	21.85	14.9	0.332
Lexington, KY	11,882	101.13	298	25.16	21.4	0.586
Louisville, KY-IN	40,771	101.10	733	18.08-	14.0	0.251
Owensboro, KY	3,908	100.08	119	30.54	17.1	0.519
Tennessee	217,539	100.36	5,424	24.91+	14.8	0.359
Chattanooga, TN-GA	19,193	100.04	450	23.55	16.4	0.372
Clarksville, TN-KY	5,033	100.14	155	30.58	20.8	0.578
Jackson, TN	3,833	100.05	78	20.07	12.9	0.249
Johnson City, TN-VA	21,925	100.03	387	17.80-	5.3	0.094-
Knoxville, TN	27,813	100.06	692	25.07	9.5	0.223
Memphis, TN-AR-MS	34,243	102.01	963	28.12+	20.5	0.551
Nashville, TN	35,893	100.06	1,004	27.91+	11.1	0.306

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	182,178	100.04	4,359	23.92	12.1	0.280
Anniston, AL	5,098	100.06	150	29.78	21.8	0.629
Birmingham, AL	41,446	100.02	911	21.95	13.0	0.265
Dothan, AL	4,992	100.10	167	33.76+	0.0	0.000
Florence, AL	6,664	100.03	201	30.36	0.0	0.000
Gadsden, AL	5,578	100.04	101	18.39	0.0	0.000
Huntsville, AL	6,820	100.06	176	26.39	0.0	0.000
Mobile, AL	20,367	100.05	463	22.98	8.8	0.207
Montgomery, AL	11,327	100.03	231	20.52	9.1	0.180
Tuscaloosa, AL	5,270	100.00	110	20.84	0.0	0.000
Mississippi	115,821	100.02	2,779	23.63	13.5	0.310
Biloxi-Gulfport, MS	7,522	100.03	179	24.37	5.5	0.142
Jackson, MS	13,617	100.03	294	21.40	6.7	0.140
Pascagoula, MS	3,617	100.08	84	23.95	0.0	0.000
West South Central	1,046,791	100.31	25,793	24.54+	15.0	0.362+
Arkansas	133,010	100.06	3,345	24.88+	15.5	0.392
Fayetteville, AR	4,818	100.08	90	18.52	32.0	0.604
Fort Smith, AR-OK	8,570	100.02	273	31.87+	25.9	0.828
Little Rock, AR	19,738	100.02	436	22.17	6.8	0.152
Pine Bluff, AR	4,422	100.02	118	26.27	7.7	0.209
Louisiana	166,324	100.02	4,171	25.03+	14.3	0.341
Alexandria, LA	5,462	100.04	109	19.91	10.4	0.177
Baton Rouge, LA	15,826	100.03	421	27.01	5.1	0.132
Houma-Thibodaux, LA	5,536	100.00	166	30.82	13.4	0.401
Lafayette, LA	5,772	100.00	133	23.37	8.3	0.181
Lake Charles, LA	6,792	100.03	145	21.71	0.0	0.000
Monroe, LA	5,691	100.00	132	22.93	14.9	0.332
New Orleans, LA	45,757	100.03	1,101	24.21	16.5	0.403
Shreveport, LA	14,257	100.03	400	27.89	13.1	0.334
Oklahoma	150,928	101.12	3,745	24.49+	18.2	0.437+
Enid, OK	3,183	100.06	82	25.23	28.2	0.581
Lawton, OK	3,380	100.03	53	16.01	0.0	0.000
Oklahoma City, OK	33,928	102.96	878	25.68	16.1	0.400
Tulsa, OK	27,512	102.37	651	23.74	12.2	0.292

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	596,529	100.24	14,532	24.35+	14.2	0.342
Abilene, TX	5,085	100.06	110	21.44	8.8	0.187
Amarillo, TX	7,443	100.03	213	28.69	19.1	0.553
Austin, TX	19,033	100.05	562	29.62+	6.9	0.213
Beaumont, TX	17,226	100.02	567	32.98+	26.2	0.833
Brazoria, TX	5,272	100.15	117	22.84	27.0	0.632
Brownsville, TX	9,212	100.16	161	17.35-	12.8	0.216
Bryan, TX	2,774	100.07	50	17.93	17.6	0.351
Corpus Christi, TX	11,794	105.87	294	25.06	17.0	0.437
Dallas, TX	65,590	100.05	1,522	23.40	16.4	0.378
El Paso, TX	16,204	100.07	359	22.51	22.9	0.522
Fort Worth, TX	38,333	100.04	908	24.00	11.4	0.273
Galveston, TX	8,057	100.04	217	27.38	14.7	0.398
Houston, TX	75,207	100.18	1,806	24.40	13.8	0.325
Killeen-Temple, TX	7,005	100.04	161	23.02	13.8	0.287
Laredo, TX	3,603	100.03	99	27.02	0.0	0.000
Longview, TX	7,993	100.04	164	20.28	17.4	0.362
Lubbock, TX	7,722	100.04	141	18.29	14.2	0.266
McAllen, TX	12,914	100.22	275	21.24	19.3	0.392
Midland, TX	3,022	100.03	79	26.84	28.4	0.739
Odessa, TX	3,853	100.03	86	22.90	0.0	0.000
San Angelo, TX	4,474	100.02	130	28.73	24.9	0.655
San Antonio, TX	43,746	100.84	1,025	23.60	13.2	0.327
Sherman-Denison, TX	5,713	100.02	188	32.67+	5.4	0.171
Texarkana, TX-AR	6,020	100.00	122	19.89	8.6	0.156
Tyler, TX	7,350	100.00	160	21.78	0.0	0.000
Victoria, TX	2,899	100.03	98	34.01	22.4	0.705
Waco, TX	9,189	100.01	205	22.07	5.2	0.104
Wichita Falls, TX	5,562	100.04	156	27.89	0.0	0.000
West	1,892,438	108.51	40,501	21.51-	11.8	0.250-
Mountain	512,714	106.74	11,524	22.66	11.5	0.253
Montana	42,164	100.09	976	23.17	11.7	0.261
Billings, MT	5,032	100.08	101	20.26	33.4	0.623
Great Falls, MT	3,820	100.13	114	30.01	0.0	0.000
Idaho	48,393	100.27	984	20.37	11.8	0.230
Boise City, ID	7,614	100.11	155	20.57	0.0	0.000
Wyoming	18,050	100.11	486	27.00	10.8	0.277
Casper, WY	2,189	100.09	66	30.83	0.0	0.000
Cheyenne, WY	2,824	100.04	51	18.16	0.0	0.000

See notes at end of table.



Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	108,397	106.45	2,398	22.22	10.3	0.222
Boulder-Longmont, CO	5,830	102.69	135	23.13	7.4	0.167
Colorado Springs, CO	10,047	106.15	243	24.83	16.3	0.434
Denver, CO	46,806	107.46	1,031	22.28	7.2	0.153
Fort Collins, CO	6,232	100.27	151	24.09	13.8	0.315
Greeley, CO	4,870	100.41	58	13.83-	14.5	0.197
Pueblo, CO	6,345	108.10	142	22.34	6.7	0.155
New Mexico	53,882	109.47	1,264	23.52	12.3	0.280
Albuquerque, NM	13,260	129.85	238	18.27-	8.8	0.158
Las Cruces, NM	4,232	100.09	116	27.88	18.2	0.503
Santa Fe, NM	3,565	107.60	94	26.62	0.0	0.000
Arizona	149,935	110.49	3,381	22.82	8.9	0.197-
Phoenix, AZ	77,221	117.57	1,709	22.31	12.9	0.283
Tucson, AZ	29,644	104.55	694	23.51	7.8	0.172
Utah	54,655	100.09	1,266	23.18	18.0	0.388
Provo-Orem, UT	6,943	100.07	174	25.01	0.0	0.000
Salt Lake City, UT	32,015	100.07	741	23.28	20.5	0.448
Nevada	37,238	117.37	769	21.55	15.9	0.348
Las Vegas, NV	20,504	122.79	453	23.14	22.5	0.528
Reno, NV	8,580	112.54	169	20.54	12.7	0.267
Pacific	1,379,724	109.17	28,977	21.09-	11.9	0.250-
Washington	192,205	109.32	4,797	25.09+	11.1	0.274
Bellingham, WA	5,651	100.69	182	31.93	11.4	0.340
Bremerton, WA	6,399	104.41	158	24.82	18.2	0.475
Olympia, WA	5,847	112.18	129	22.21	0.0	0.000
Richland, WA	5,520	100.14	149	27.67	7.6	0.202
Seattle, WA	63,926	117.91	1,579	24.89	8.2	0.207
Spokane, WA	16,494	107.06	438	26.48	9.2	0.237
Tacoma, WA	20,877	103.21	490	23.75	14.1	0.349
Vancouver, WA	6,880	129.08	134	19.62	8.2	0.147
Yakima, WA	9,645	100.31	299	30.64+	23.4	0.703
Oregon	126,873	116.44	2,729	21.55	10.3	0.221
Eugene, OR	12,173	114.04	282	23.29	3.8	0.083-
Medford, OR	8,982	100.24	165	18.54	18.5	0.346
Portland, OR	37,089	144.65	843	22.63	11.2	0.259
Salem, OR	13,535	112.51	236	17.16-	4.2	0.069-

See notes at end of table.

Table 3. Prostatectomy (male only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	1,013,000	107.93	20,629	20.44-	12.4	0.251
Anaheim-Santa Ana, CA	63,605	115.06	1,470	23.23	8.3	0.189
Bakersfield, CA	19,773	100.29	425	21.70	9.7	0.212
Chico, CA	11,932	101.11	234	19.66	9.4	0.171
Fresno, CA	24,716	100.09	464	18.69-	11.1	0.198
Los Angeles, CA	266,701	111.77	5,802	21.86	14.0	0.308
Merced, CA	5,926	100.17	151	25.85	14.1	0.356
Modesto, CA	14,028	101.36	283	20.17	13.8	0.287
Oakland, CA	75,668	100.99	1,294	17.18-	14.8	0.254
Oxnard-Ventura, CA	20,286	107.92	434	21.51	7.3	0.151
Redding, CA	7,926	100.30	206	26.52	10.9	0.275
Riverside, CA	85,444	111.89	2,013	23.62	13.6	0.320
Sacramento, CA	50,659	109.99	1,008	20.24-	13.3	0.271
Salinas, CA	12,371	100.15	249	20.16	3.9	0.081-
San Diego, CA	85,033	111.05	1,716	20.31-	15.4	0.311
San Francisco, CA	64,966	114.00	1,095	16.73-	13.7	0.221
San Jose, CA	42,257	100.60	715	17.11-	7.0	0.122-
Santa Barbara, CA	15,606	100.37	366	23.23	10.7	0.247
Santa Cruz, CA	9,974	100.23	196	19.17	9.6	0.184
Santa Rosa, CA	18,306	100.65	329	17.70-	15.2	0.263
Stockton, CA	17,967	109.79	304	16.77-	10.2	0.161
Vallejo, CA	15,133	101.51	234	15.50-	12.4	0.197
Visalia, CA	12,543	100.08	262	20.69	3.8	0.078-
Yuba City, CA	5,260	100.67	142	27.22	29.6	0.798
Alaska	7,848	100.24	117	15.56-	10.4	0.146
Anchorage, AK	2,522	100.32	41	17.43	0.0	0.000
Hawaii	39,798	118.57	705	17.81-	10.5	0.182
Honolulu, HI	28,022	118.74	481	17.42-	10.9	0.190

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Hysterectomy

Hysterectomy involves the removal of the uterus and, in some cases, the fallopian tubes and ovaries. It is performed for a variety of indications, such as for benign and malignant tumors. Estimates from the National Center for Health Statistics indicate that, in 1985, 91 percent of all hysterectomy operations were performed on women under 65 years of age. Hospital stays for hysterectomy in the aged female Medicare population accounted for 48,046 operations in 1986, a rate of 2.99 discharges per 1,000 female enrollees. The 30-day post-admission death rate was 8.9 deaths per 1,000 discharges, or less than 1 percent of all cases (Table 1).

## Patterns by age

The hospital discharge rate per 1,000 enrollees for hysterectomy was highest in the age group 65–74 years. The rate declined with age from 3.74 discharges per 1,000 enrollees for women aged 65–74 years to 0.83 for those 85 years of age or over.

The 30-day post-admission death rate per 1,000 discharges, on the other hand, increased with age from 6.0 deaths per 1,000 discharges for women aged 65–74 years to 29.7 for those 85 years of age or over. Data indications are that the older aged population having this procedure may comprise a more severe and frail case mix than their younger counterparts.

NOTE: Hysterectomy is ICD–9–CM codes 68.4–68.7.

## Patterns by race

For all age groups combined, white women had 54 percent more hysterectomies per 1,000 enrollees than black women (3.08 versus 2.00). However, the overall 30-day post-admission death rate per 1,000 discharges was higher for black women (15.0) than for white women (8.8), suggesting that black women comprise a more severe case mix than their white counterparts.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

Variations in the rate of hysterectomies across the United States are shown in Figure 1. States with the highest discharge rates per 1,000 enrollees were in the West and North Central Regions. The States with the lowest discharge rates per 1,000 enrollees were scattered throughout the country, but a large number were concentrated in the Eastern part of the United States. Discharge rates per 1,000 enrollees by State ranged

from a high of 4.57 in North Dakota to a low of 1.67 in the District of Columbia and 2.23 in Louisiana (Table 2). The low discharge rate in the District of Columbia may be related to the fact that Medicare hospital discharge data are incomplete for that area. Variations in discharge rates by MSAs and rural areas across and within U.S. census divisions are shown in Figure 2. The West North Central Division had the highest median discharge rate per 1,000 enrollees, and the Middle Atlantic Division had the lowest.

## Urban-rural patterns

In the United States as a whole, the discharge rate for hysterectomy was a little higher for rural areas than for all MSAs combined. This pattern held true in each of the U.S. census regions. Nationally, the difference in the 30-day post-admission death rate per 1,000 discharges between the rural areas and the MSAs combined was very small. This was not the case for the Northeast and North Central Regions, where the difference was substantial. In the Northeast, the 30-day post-admission death rate per 1,000 discharges was 72 percent higher in rural areas than in the MSAs combined. In the North Central Region, the 30-day post-admission death rate per 1,000 discharges was 51 percent higher in the MSAs combined than in rural areas.



Table 1. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	per 1,000 discharges	non-HMD enrollees
All women (1)	16,047,933	97.16	48,057	2.99	8.9	0.026
65-74 years	9,106,149	96.56	34,080	3.74	6.0	0.022
75-84 years	5,108,081	97.51	12,464	2.44	14.5	0.035
85 years or over	1,833,703	98.74	1,513	0.83	29.7	0.024
White women	14,183,050	97.07	43,655	3.08	8.8	0.027
65-74 years	7,990,592	96.55	30,852	3.86	5.6	0.021
75-84 years	4,560,510	97.42	11,418	2.50	14.7	0.036
85 years or over	1,631,948	98.69	1,385	0.85	30.3	0.025
Black women	1,199,155	98.10	2,396	2.00	15.0	0.030
65-74 years	693,709	97.74	1,720	2.48	14.0	0.034
75-84 years	368,028	98.37	586	1.59	15.4	0.024
85 years or over	137,418	99.26	90	0.65	33.3	0.021

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

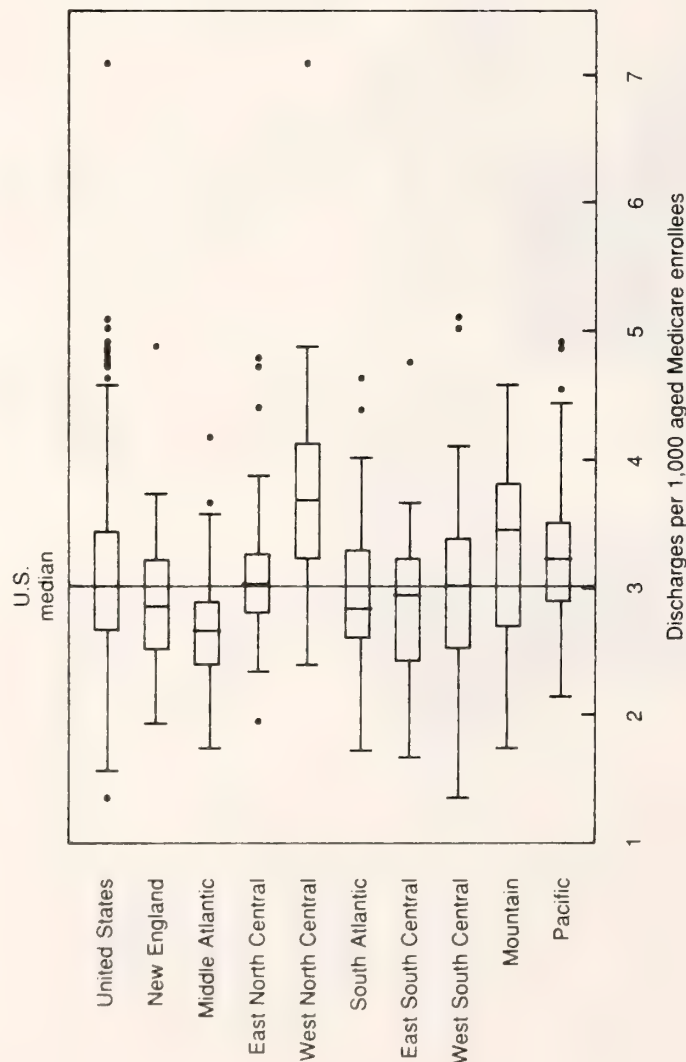
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 1. Hysterectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
 SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Hysterectomy: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Midland, TX	1.36
	Albany, GA	4.64
	Muskegon, MI	4.71
	Sioux Falls, SD	4.72
	Owensboro, KY	4.78
	Terre Haute, IN	4.80
	Redding, CA	4.87
	Grand Forks, ND	4.88
	Lewiston-Auburn, ME	4.88
	Richland, WA	4.91
Northeast	Wichita Falls, TX	5.04
	Lubbock, TX	5.10
	Bismarck, ND	7.09
	Lewiston-Auburn, ME	4.88
Middle Atlantic	State College, PA	3.66
	Altoona, PA	4.19
East North Central	Kokomo, IN	1.94
	Racine, WI	4.40
	Muskegon, MI	4.71
	Terre Haute, IN	4.80
West North Central	Bismarck, ND	7.09
South Atlantic	Naples, FL	4.39
	Albany, GA	4.64
East South Central	Owensboro, KY	4.78
West South Central	Wichita Falls, TX	5.04
	Lubbock, TX	5.10
Pacific	Bellingham, WA	4.56
	Redding, CA	4.87
	Richland, WA	4.91

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	16,047,933	97.16	48,057	2.99	8.9	0.026
Metropolitan	11,755,842	96.41	34,139	2.90-	9.1	0.026
Rural	4,292,091	99.29	13,918	3.24+	8.6	0.027
Northeast	3,844,613	98.38	10,136	2.65-	9.5	0.025
Metropolitan	3,422,253	98.21	8,823	2.59-	8.7	0.022
Rural	422,360	99.75	1,313	3.11	15.0	0.046
New England	968,714	96.84	2,698	2.83	9.3	0.026
Metropolitan	834,851	96.41	2,266	2.76-	8.5	0.023
Rural	133,863	99.61	432	3.26	13.9	0.043
Maine	91,982	99.90	279	3.08	27.1	0.084
Metropolitan	50,357	99.92	147	2.97	31.6	0.097
Rural	41,625	99.89	132	3.22	21.8	0.071
New Hampshire	69,243	99.11	222	3.23	0.0	0.000
Metropolitan	45,428	98.74	141	3.14	0.0	0.000
Rural	23,815	99.82	81	3.41	0.0	0.000
Vermont	37,658	99.83	109	2.95	0.0	0.000
Metropolitan	6,469	99.92	14	2.21	0.0	0.000
Rural	31,189	99.81	95	3.10	0.0	0.000
Massachusetts	446,828	94.86	1,187	2.73	7.9	0.022
Metropolitan	416,974	94.59	1,087	2.68	6.0	0.016
Rural	29,854	98.82	100	3.35	32.5	0.099
Rhode Island	82,230	98.01	243	2.98	12.3	0.035
Metropolitan	82,230	98.01	243	2.98	12.3	0.035
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	240,773	97.96	658	2.74	7.6	0.020
Metropolitan	233,393	97.91	634	2.73	7.9	0.021
Rural	7,380	99.77	24	3.30	0.0	0.000
Middle Atlantic	2,875,899	98.91	7,438	2.59-	9.6	0.025
Metropolitan	2,587,402	98.81	6,557	2.54-	8.7	0.022
Rural	288,497	99.82	881	3.04	15.5	0.047
New York	1,316,538	99.14	3,144	2.42-	13.0	0.030
Metropolitan	1,185,126	99.06	2,768	2.37-	12.0	0.027
Rural	131,412	99.80	376	2.89	19.9	0.059

See notes at end of table.

Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Jersey	555,985	98.20	1,456	2.59-	8.1	0.021
Metropolitan	555,985	98.20	1,456	2.59-	8.1	0.021
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,003,376	99.02	2,838	2.80	6.3	0.017
Metropolitan	846,291	98.86	2,333	2.73-	5.1	0.014-
Rural	157,085	99.83	505	3.17	12.0	0.038
North Central	4,174,967	96.82	13,361	3.23+	8.8	0.028
Metropolitan	2,700,606	95.81	8,357	3.11	10.1	0.031
Rural	1,474,361	98.75	5,004	3.46+	6.7	0.023
East North Central	2,868,693	98.06	8,764	3.05	8.7	0.026
Metropolitan	2,108,274	97.53	6,374	3.02	9.5	0.028
Rural	760,419	99.55	2,390	3.16	6.5	0.019
Ohio	765,493	99.55	2,343	3.04	7.9	0.023
Metropolitan	601,420	99.66	1,837	3.03	7.8	0.023
Rural	164,073	99.16	506	3.09	8.3	0.024
Indiana	378,622	98.04	1,157	3.06	12.3	0.035
Metropolitan	244,449	97.27	735	3.00	13.6	0.039
Rural	134,173	99.49	422	3.15	10.0	0.029
Illinois	773,788	96.47	2,240	2.91	8.1	0.023
Metropolitan	585,725	95.47	1,641	2.81	9.8	0.027
Rural	188,063	99.72	599	3.25	3.4	0.010
Michigan	587,928	97.32	1,862	3.13	10.0	0.030
Metropolitan	452,030	96.67	1,426	3.13	10.8	0.033
Rural	135,898	99.53	436	3.15	7.3	0.022
Wisconsin	362,862	99.66	1,162	3.24	5.8	0.019
Metropolitan	224,650	99.53	735	3.31	6.5	0.022
Rural	138,212	99.88	427	3.12	4.7	0.014
West North Central	1,306,274	94.22	4,597	3.63+	9.1	0.032
Metropolitan	592,332	90.13	1,983	3.45+	12.0	0.041
Rural	713,942	97.90	2,614	3.79+	6.9	0.025
Minnesota	243,193	79.47	814	3.51+	5.7	0.019
Metropolitan	121,793	70.59	375	3.27	4.9	0.016
Rural	121,400	90.93	439	3.75+	6.4	0.023

See notes at end of table.

Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Iowa						
Metropolitan	244,344	99.45	838	3.55+	12.6	0.044
Rural	84,466	98.49	273	3.32	17.8	0.058
	159,878	99.96	565	3.67+	10.2	0.036
Missouri						
Metropolitan	399,946	98.42	1,347	3.43+	11.3	0.039
Rural	239,871	97.45	779	3.31	13.2	0.044
	160,075	99.92	568	3.61+	8.6	0.030
North Dakota						
Metropolitan	48,830	98.72	219	4.57+	4.7	0.020
Rural	13,809	98.61	72	5.38	0.0	0.000
	35,021	98.76	147	4.26	7.2	0.027
South Dakota						
Metropolitan	56,201	99.67	233	4.29+	4.1	0.017
Rural	12,268	99.91	53	4.40	0.0	0.000
	43,933	99.61	180	4.26+	5.3	0.021
Nebraska						
Metropolitan	126,347	98.66	453	3.73+	8.2	0.030
Rural	43,807	96.37	146	3.42	18.4	0.067
	82,540	99.92	307	3.89+	3.1	0.012
Kansas						
Metropolitan	187,413	96.38	693	3.83+	8.3	0.031
Rural	76,318	94.19	285	3.82	14.3	0.051
	111,095	97.95	408	3.84+	4.5	0.017
South						
Metropolitan	5,380,840	98.33	16,055	2.96	8.4	0.024
Rural	3,477,339	97.47	10,239	2.92	8.3	0.024
	1,903,501	99.93	5,816	3.03	8.5	0.025
South Atlantic						
Metropolitan	2,800,326	97.02	8,333	2.93	10.0	0.028
Rural	1,996,827	95.92	5,886	2.91	8.3	0.024
	803,499	99.88	2,447	2.99	14.2	0.041
Delaware						
Metropolitan	41,952	99.96	143	3.36	0.0	0.000
Rural	26,861	99.97	100	3.68	0.0	0.000
	15,091	99.95	43	2.81	0.0	0.000
Maryland						
Metropolitan	264,403	99.56	646	2.42-	11.0	0.026
Rural	240,028	99.52	569	2.35-	10.7	0.024
	24,375	99.95	77	3.15	13.8	0.041
District of Col.						
Metropolitan	42,011	99.79	68	1.67-	14.5	0.023
Rural	42,011	99.79	68	1.67-	14.5	0.023
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.



Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	342,790	99.92	945	2.73	6.5	0.017
Metropolitan	217,936	99.89	580	2.63	8.9	0.022
Rural	124,854	99.98	365	2.89	2.7	0.008
West Virginia	146,587	99.06	464	3.14	15.1	0.046
Metropolitan	55,395	97.62	152	2.72	6.7	0.018
Rural	91,192	99.96	312	3.39	19.1	0.064
North Carolina	420,858	99.94	1,162	2.71	13.5	0.035
Metropolitan	214,233	99.90	599	2.75	13.1	0.037
Rural	206,625	99.97	563	2.66	13.9	0.033
South Carolina	200,256	99.50	575	2.79	13.1	0.034
Metropolitan	114,419	99.16	326	2.77	9.9	0.026
Rural	85,837	99.95	249	2.83	17.4	0.046
Georgia	346,554	99.76	1,041	2.96	15.3	0.043
Metropolitan	195,216	99.62	591	2.99	14.5	0.040
Rural	151,338	99.95	450	2.94	16.4	0.045
Florida	994,915	92.48	3,289	3.26+	7.1	0.023
Metropolitan	890,728	91.74	2,901	3.22	5.5	0.017
Rural	104,187	99.34	388	3.57	18.9	0.067
East South Central	1,042,331	99.82	3,149	3.01	5.5	0.016
Metropolitan	535,128	99.67	1,609	2.99	7.6	0.022
Rural	507,203	99.97	1,540	3.03	3.3-	0.009-
Kentucky	254,254	99.74	756	2.97	5.2	0.015
Metropolitan	113,585	99.46	330	2.91	8.7	0.026
Rural	140,669	99.97	426	3.01	2.3-	0.007
Tennessee	332,788	99.65	1,072	3.20	5.8	0.018
Metropolitan	209,605	99.47	662	3.15	6.1	0.019
Rural	123,183	99.97	410	3.29	5.2	0.016
Alabama	280,953	99.98	837	2.96	4.9	0.014
Metropolitan	172,203	99.98	518	2.98	7.9	0.023
Rural	108,750	99.98	319	2.92	0.0	0.000
Mississippi	174,336	99.98	484	2.80	6.5	0.017
Metropolitan	39,735	99.96	99	2.47	11.2	0.025
Rural	134,601	99.98	385	2.90	5.4	0.014

See notes at end of table.

Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central	1,538,183	99.77	4,573	2.97	7.5	0.022
Metropolitan	945,384	99.64	2,744	2.89	8.8	0.025
Rural	592,799	99.97	1,829	3.10	5.6	0.016
Arkansas	188,729	99.97	634	3.35	8.2	0.026
Metropolitan	61,193	99.98	184	3.01	11.0	0.031
Rural	127,536	99.96	450	3.50	7.0	0.023
Louisiana	249,644	99.99	555	2.23-	9.2	0.020
Metropolitan	163,044	99.99	344	2.11-	9.0	0.018
Rural	86,600	99.99	211	2.47	9.5	0.023
Oklahoma	227,788	99.10	733	3.25	13.7	0.042
Metropolitan	110,308	98.20	339	3.10	14.3	0.044
Rural	117,480	99.97	394	3.40	13.2	0.041
Texas	872,022	99.83	2,651	3.03	5.3	0.016
Metropolitan	610,839	99.77	1,877	3.05	7.6	0.022
Rural	261,183	99.98	774	2.98	0.0	0.000
West	2,647,513	93.74	8,505	3.20+	9.4	0.030
Metropolitan	2,155,644	92.81	6,720	3.12	9.4	0.029
Rural	491,869	98.07	1,785	3.55+	9.4	0.032
Mountain	687,924	94.87	2,335	3.33+	8.9	0.029
Metropolitan	423,320	92.95	1,333	3.10	7.6	0.023
Rural	264,604	98.11	1,002	3.71+	10.8	0.037
Montana	55,084	99.90	210	3.79	4.7	0.018
Metropolitan	12,321	99.89	54	4.34	0.0	0.000
Rural	42,763	99.90	156	3.63	6.6	0.023
Idaho	61,429	99.80	222	3.56	9.4	0.032
Metropolitan	10,857	99.90	33	3.00	0.0	0.000
Rural	50,572	99.78	189	3.68	11.3	0.039
Wyoming	24,358	99.92	86	3.50	12.2	0.041
Metropolitan	7,252	99.93	26	3.54	0.0	0.000
Rural	17,106	99.91	60	3.49	18.1	0.057
Colorado	158,266	95.28	444	2.82	7.1	0.018
Metropolitan	121,607	95.83	301	2.49	10.4	0.024
Rural	36,659	93.50	143	3.92	0.0	0.000

See notes at end of table.

Table 2. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
New Mexico	71,489	93.36	226	3.11	14.3	0.041
Metropolitan	30,555	87.75	83	2.68	0.0	0.000
Rural	40,934	98.04	143	3.43	23.5	0.073
Arizona	198,813	91.97	707	3.44	10.2	0.035
Metropolitan	151,066	90.09	515	3.32	9.8	0.033
Rural	47,747	98.47	192	3.79	11.5	0.042
Utah	73,924	99.93	303	4.02+	3.4	0.013
Metropolitan	54,361	99.94	211	3.81	4.7	0.018
Rural	19,563	99.91	92	4.59	0.0	0.000
Nevada	44,561	86.96	137	2.90	17.0	0.045
Metropolitan	35,301	85.74	110	2.93	10.6	0.028
Rural	9,260	91.94	27	2.75	42.1	0.108
Pacific	1,959,589	93.36	6,170	3.15	9.5	0.030
Metropolitan	1,732,324	92.78	5,387	3.12	9.8	0.031
Rural	227,265	98.02	783	3.37	7.8	0.026
Washington	269,501	93.09	949	3.53+	8.5	0.029
Metropolitan	205,738	91.74	717	3.51+	7.2	0.024
Rural	63,763	97.75	232	3.60	12.2	0.047
Oregon	176,905	87.55	595	3.38	3.3	0.011
Metropolitan	109,898	81.85	354	3.29	2.6	0.009
Rural	67,007	98.83	241	3.51	4.3	0.014
California	1,464,248	94.45	4,500	3.08	10.8	0.034
Metropolitan	1,383,927	94.17	4,230	3.07	11.0	0.034
Rural	80,321	99.62	270	3.28	7.7	0.024
Alaska	8,500	99.80	25	2.75	0.0	0.000
Metropolitan	3,103	99.81	9	2.66	0.0	0.000
Rural	5,397	99.80	16	2.80	0.0	0.000
Hawaii	40,435	82.96	101	2.40	0.0	0.000
Metropolitan	29,658	82.47	77	2.49	0.0	0.000
Rural	10,777	84.31	24	2.15	0.0	0.000

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths		
	Number	As percent of all enrollees		Number	Per 1,000 non-HMD discharges	Per 1,000 non-HMD enrollees
United States	16,047,933	102.92		48,057	8.9	0.026
Northeast	3,844,613	101.65		10,136	9.5	0.025
New England	968,714	103.27		2,698	9.3	0.026
Maine	91,982	100.10		279	27.1	0.084
Bangor, ME	9,652	100.10		22	0.0	0.000
Lewiston-Auburn, ME	8,379	100.06		40	70.5	0.350
Portland, ME	32,326	100.08		85	21.7	0.060
New Hampshire	69,243	100.90		222	0.0	0.000
Manchester, NH	27,566	101.86		101	0.0	0.000
Portsmouth, NH	17,862	100.38		40	0.0	0.000
Vermont	37,658	100.17		109	0.0	0.000
Burlington, VT	6,469	100.08		14	0.0	0.000
Massachusetts	446,828	105.42		1,187	7.9	0.022
Boston, MA	273,214	103.69		730	7.6	0.021
New Bedford, MA	40,590	101.11		117	0.0	0.000
Pittsfield, MA	12,636	108.29		24	0.0	0.000
Springfield, MA	45,106	106.37		126	7.8	0.022
Worcester, MA	45,428	120.68		90	0.0	0.000
Rhode Island	82,230	102.03		243	12.3	0.035
Providence, RI	82,230	102.03		243	12.3	0.035
Connecticut	240,773	102.08		658	7.6	0.020
Bridgeport, CT	59,045	102.90		147	6.7	0.016
Hartford, CT	94,595	100.64		276	7.6	0.021
New Haven, CT	63,265	104.16		166	11.3	0.031
New London, CT	16,488	100.23		45	0.0	0.000

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	2,875,899	101.10	7,438	2.59-	9.6	0.025
New York	1,316,538	100.87	3,144	2.42-	13.0	0.030
Albany, NY	71,029	100.99	179	2.54	0.0	0.000
Binghamton, NY	21,728	100.03	50	2.32	0.0	0.000
Buffalo, NY	82,694	101.17	216	2.59	18.8	0.048
Elmira, NY	8,352	100.05	22	2.66	0.0	0.000
Glens Falls, NY	9,176	100.23	19	2.09	0.0	0.000
Nassau-Suffolk, NY	177,206	100.10	408	2.30-	12.8	0.028
New York, NY	623,418	100.33	1,366	2.25-	13.5	0.029
Niagara Falls, NY	18,412	100.28	55	2.92	0.0	0.000
Orange County, NY	18,457	100.09	42	2.28	25.3	0.053
Poughkeepsie, NY	16,972	101.27	29	1.73-	36.0	0.057
Rochester, NY	63,555	110.94	167	2.69	11.7	0.030
Syracuse, NY	45,682	100.06	113	2.48	8.8	0.021
Utica-Rome, NY	28,445	100.08	102	3.58	9.2	0.035
New Jersey	555,985	101.83	1,456	2.59-	8.1	0.021
Atlantic City, NJ	28,241	101.81	70	2.49	0.0	0.000
Bergen-Passaic, NJ	103,364	100.41	282	2.71	6.8	0.019
Jersey City, NJ	39,850	100.63	83	2.06-	12.2	0.025
Middlesex, NJ	54,224	104.98	179	3.21	5.9	0.018
Monmouth-Ocean, NJ	92,512	100.36	224	2.38	4.6	0.010
Newark, NJ	129,813	100.49	347	2.68	14.1	0.038
Trenton, NJ	23,668	102.47	74	3.10	12.6	0.042
Vineland, NJ	9,844	103.44	24	2.39	0.0	0.000
Pennsylvania	1,003,376	100.99	2,838	2.80	6.3	0.017-
Allentown, PA-NJ	57,062	100.70	187	3.22	5.3	0.017
Altoona, PA	12,681	100.01	53	4.19	0.0	0.000
Beaver County, PA	16,208	100.04	47	2.78	22.8	0.061
Erie, PA	21,081	100.05	54	2.51	18.8	0.047
Harrisburg, PA	44,444	100.03	116	2.59	23.8	0.066
Johnstown, PA	23,972	100.03	71	2.88	0.0	0.000
Lancaster, PA	28,955	100.06	79	2.77	0.0	0.000
Philadelphia PA-NJ	353,256	103.46	867	2.45-	4.6	0.011
Pittsburgh, PA	196,747	100.64	577	2.86	1.7-	0.005
Reading, PA	29,010	100.08	75	2.58	0.0	0.000
Scranton, PA	76,552	100.04	214	2.74	4.7	0.013
Sharon, PA	11,268	100.03	24	2.09	0.0	0.000
State College, PA	5,954	100.03	22	3.66	0.0	0.000
Williamsport, PA	10,248	100.02	28	2.74	0.0	0.000
York, PA	28,749	100.03	84	2.90	11.4	0.034

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	4,174,967	103.28	13,361	3.23+	8.8	0.028
East North Central	2,868,693	101.98	8,764	3.05	8.7	0.026
Ohio	765,493	100.45	2,343	3.04	7.9	0.023
Akron, OH	45,848	100.07	148	3.20	20.5	0.064
Canton, OH	30,988	100.02	87	2.77	0.0	0.000
Cincinnati, OH-KY-IN	99,261	100.04	289	2.93	6.7	0.020
Cleveland, OH	147,989	100.26	475	3.17	8.7	0.027
Columbus, OH	74,946	100.23	218	2.91	18.4	0.052
Dayton, OH	62,632	100.04	192	3.04	5.0	0.015
Hamilton, OH	15,824	100.05	37	2.34	0.0	0.000
Lima, OH	11,851	100.03	38	3.23	0.0	0.000
Lorain-Elyria, OH	16,038	100.10	62	3.77	0.0	0.000
Mansfield, OH	9,143	100.05	36	3.89	0.0	0.000
Steubenville, OH-WV	13,054	101.06	42	3.10	23.2	0.076
Toledo, OH	43,476	100.04	113	2.60	0.0	0.000
Youngstown, OH	41,106	100.05	126	2.97	8.9	0.024
Indiana	378,622	102.00	1,157	3.06	12.3	0.035
Anderson, IN	10,567	100.14	33	3.07	0.0	0.000
Bloomington, IN	4,821	100.08	14	2.91	0.0	0.000
Elkhart-Goshen, IN	9,506	100.06	31	3.28	0.0	0.000
Evansville, IN-KY	21,287	104.08	54	2.56	17.1	0.045
Fort Wayne, IN	23,034	101.98	71	3.11	0.0	0.000
Gary-Hammond, IN	35,948	102.58	114	3.05	18.9	0.055
Indianapolis, IN	73,427	106.13	207	2.85	19.4	0.053
Kokomo, IN	6,629	100.06	13	1.94	0.0	0.000
Lafayette, IN	6,865	100.07	18	2.66	0.0	0.000
Muncie, IN	8,562	100.06	26	3.02	0.0	0.000
South Bend, IN	20,203	100.06	65	3.22	29.7	0.096
Terre Haute, IN	12,428	100.13	59	4.80	32.7	0.157
Illinois	773,788	103.66	2,240	2.91	8.1	0.023
Aurora-Elgin, IL	19,147	101.05	50	2.65	0.0	0.000
Bloomington, IL	7,861	100.05	22	2.88	0.0	0.000
Champaign, IL	8,227	100.09	19	2.35	0.0	0.000
Chicago, IL	375,363	106.45	1,048	2.79	13.4	0.037
Decatur, IL	9,884	100.03	26	2.68	0.0	0.000
Joliet, IL	16,996	102.24	47	2.75	0.0	0.000
Kankakee, IL	7,153	100.00	19	2.65	0.0	0.000
Lake County, IL	21,686	102.98	69	3.16	0.0	0.000
Peoria, IL	26,419	100.07	67	2.56	0.0	0.000
Rockford, IL	17,078	111.49	47	2.78	25.6	0.057
Springfield, IL	15,782	100.03	55	3.54	0.0	0.000

See notes at end of table.



Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	587,928	102.76	1,862	3.13	10.0	0.030
Ann Arbor, MI	10,995	104.67	37	3.42	0.0	0.000
Battle Creek, MI	10,995	100.07	29	2.85	74.0	0.192
Benton Harbor, MI	12,817	100.12	46	3.56	0.0	0.000
Detroit, MI	271,937	103.09	820	2.97	7.6	0.022
Flint, MI	26,689	107.68	81	3.01	13.4	0.037
Grand Rapids, MI	39,031	104.20	120	3.11	8.4	0.025
Jackson, MI	10,258	100.12	34	3.31	0.0	0.000
Kalamazoo, MI	13,342	100.17	42	3.18	25.4	0.073
Lansing, MI	20,128	109.24	77	3.87	23.2	0.097
Muskegon, MI	11,283	101.58	54	4.71	0.0	0.000
Saginaw, MI	25,345	103.44	86	3.35	22.0	0.077
Wisconsin	362,862	100.34	1,162	3.24	5.8	0.019
Appleton, WI	20,594	100.04	68	3.33	0.0	0.000
Eau Claire, WI	9,971	100.04	32	3.25	31.3	0.098
Green Bay, WI	11,659	100.03	40	3.44	0.0	0.000
Janesville, WI	10,061	100.11	30	3.04	0.0	0.000
Kenosha, WI	8,556	100.06	24	2.80	0.0	0.000
LaCrosse, WI	7,362	100.08	20	2.79	42.6	0.132
Madison, WI	18,787	100.23	43	2.35	0.0	0.000
Milwaukee, WI	102,776	100.66	347	3.42	8.1	0.028
Racine, WI	12,362	100.08	54	4.40	0.0	0.000
Sneboygan, WI	6,700	100.01	29	3.37	0.0	0.000
Wausau, WI	7,544	100.05	22	2.91	0.0	0.000
West North Central	1,306,274	106.14	4,597	3.63+	9.1	0.032
Minnesota	243,193	125.84	814	3.51+	5.7	0.019
Duluth, MN-WI	18,644	125.83	66	3.60	0.0	0.000
Minneapolis, MN-WI	92,903	146.82	279	3.22	6.5	0.020
Rochester, MN	5,934	100.37	22	3.91	0.0	0.000
St. Cloud, MN	7,579	132.30	23	3.21	0.0	0.000
Iowa	244,344	100.55	838	3.55+	12.6	0.044
Cedar Rapids, IA	11,818	100.06	35	3.03	0.0	0.000
Davenport, IA-IL	27,168	100.05	96	3.56	0.0	0.000
Des Moines, IA	25,280	104.83	70	2.85	0.0	0.000
Dubuque, IA	7,221	100.06	32	4.58	32.5	0.135
Iowa City, IA	3,858	100.10	16	4.32	0.0	0.000
Sioux City, IA-NE	9,794	100.04	29	3.07	67.8	0.199
Waterloo, IA	11,764	100.03	40	3.45	25.2	0.083

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Missouri	399,946	101.60	1,347	3.43+	11.3	0.039
Columbia, MO	5,224	100.00	19	3.72	0.0	0.000
Joplin, MO	11,822	100.04	48	4.07	0.0	0.000
Kansas City, MO-KS	96,198	103.89	341	3.62	5.7	0.020
St. Joseph, MO	8,515	100.02	29	3.49	88.1	0.342
St. Louis, MO-IL	176,586	102.14	534	3.07	14.6	0.044
Springfield, MO	16,974	100.05	50	2.99	0.0	0.000
North Dakota	48,830	101.30	219	4.57+	4.7	0.020
Bismarck, ND	4,903	103.83	34	7.09	0.0	0.000
Fargo, ND-MN	8,510	102.77	33	4.04	0.0	0.000
Grand Forks, ND	3,407	100.03	16	4.88	0.0	0.000
South Dakota	56,201	100.33	233	4.29+	4.1	0.017
Rapid City, SD	4,187	100.10	16	3.81	0.0	0.000
Sioux Falls, SD	8,081	100.09	37	4.72	0.0	0.000
Nebraska	126,347	101.36	453	3.73+	8.2	0.030
Lincoln, NE	13,114	101.32	55	4.36	0.0	0.000
Omaha, NE-IA	35,829	104.24	100	2.85	35.9	0.109
Kansas	187,413	103.75	693	3.83+	8.3	0.031
Lawrence, KS	3,062	112.51	7	2.40	177.6	0.318
Topeka, KS	11,829	102.49	39	3.44	0.0	0.000
Wichita, KS	28,535	110.81	115	4.13	16.5	0.069
South	5,380,840	101.70	16,055	2.96	8.4	0.024
South Atlantic	2,800,326	103.07	8,333	2.93	10.0	0.028
Delaware	41,952	100.04	143	3.36	0.0	0.000
Wilmington, DE-NJ-MD	34,831	100.27	118	3.34	8.5	0.028
Maryland	264,403	100.44	646	2.42-	11.0	0.026
Baltimore, MD	149,080	100.09	346	2.29-	11.1	0.026
Cumberland, MD-WV	10,432	100.05	17	1.61	0.0	0.000
Hagerstown, MD	8,773	100.06	16	1.81	64.6	0.112
District of Col.	42,011	100.21	68	1.67-	14.5	0.023
Washington, DC-MD-VA	160,257	100.82	401	2.50-	2.6	0.006

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	342,790	100.08	945	2.73	6.5	0.017
Charlottesville, VA	7,237	100.06	14	1.94	0.0	0.000
Danville, VA	9,457	100.01	35	3.62	28.1	0.104
Lynchburg, VA	11,219	100.02	26	2.31	0.0	0.000
Norfolk, VA	62,525	100.03	157	2.45	20.1	0.047
Richmond, VA	53,312	100.02	138	2.58	7.7	0.018
Roanoke, VA	19,187	100.02	47	2.49	0.0	0.000
West Virginia	146,587	100.95	464	3.14	15.1	0.046
Charleston, WV	20,677	100.03	62	2.95	0.0	0.000
Huntington, WV-KY-OH	24,673	100.06	68	2.73	0.0	0.000
Parkersburg, WV-OH	12,106	100.02	38	3.16	0.0	0.000
Wheeling, WV-OH	13,864	118.23	31	2.23	0.0	0.000
North Carolina	420,858	100.06	1,162	2.71	13.5	0.035
Asheville, NC	14,994	100.06	39	2.62	0.0	0.000
Burlington, NC	8,874	100.01	24	2.63	42.6	0.111
Charlotte, NC	67,589	100.18	161	2.33	31.3	0.072
Fayetteville, NC	8,191	100.02	23	2.70	0.0	0.000
Greensboro, NC	61,308	100.03	190	3.06	10.6	0.032
Hickory, NC	14,242	100.02	50	3.40	22.8	0.070
Jacksonville, NC	3,068	100.13	9	2.79	0.0	0.000
Raleigh-Durham, NC	35,389	100.13	99	2.78	0.0	0.000
Wilmington, NC	7,810	100.04	22	2.75	0.0	0.000
South Carolina	200,256	100.50	575	2.79	13.1	0.034
Anderson, SC	10,179	100.23	29	2.77	31.6	0.097
Charleston, SC	20,767	100.99	56	2.61	0.0	0.000
Columbia, SC	21,675	100.02	64	2.88	0.0	0.000
Florence, SC	6,991	100.03	23	3.17	0.0	0.000
Greenville, SC	40,637	101.79	108	2.59	9.9	0.024
Georgia	346,554	100.24	1,041	2.96	15.3	0.043
Albany, GA	5,749	100.05	27	4.64	0.0	0.000
Athens, GA	8,419	100.04	32	3.78	0.0	0.000
Atlanta, GA	118,495	100.61	382	3.19	13.9	0.042
Augusta, GA-SC	20,151	100.06	49	2.38	23.2	0.049
Columbus, GA-AL	14,114	100.04	30	2.08	0.0	0.000
Macon, GA	16,330	100.01	37	2.23	27.6	0.061
Savannah, GA	15,487	100.04	43	2.73	24.9	0.063

See notes at end of table.



Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Florida	994,915	108.13	3,289	3.26+	7.1	0.023
Bradenton, FL	24,944	100.24	83	3.32	0.0	0.000
Daytona Beach, FL	36,391	106.37	120	3.27	9.2	0.027
Fort Lauderdale, FL	111,112	118.45	305	2.72	6.4	0.016
Fort Myers, FL	33,418	100.30	105	2.99	0.0	0.000
Fort Pierce, FL	22,501	100.48	92	3.86	13.5	0.044
FT. Walton Beach, FL	5,682	100.12	18	3.02	0.0	0.000
Gainesville, FL	9,743	100.31	28	2.83	0.0	0.000
Jacksonville, FL	48,872	101.60	167	3.38	0.0	0.000
Lakeland, FL	31,509	100.35	122	3.76	0.0	0.000
Melbourne, FL	25,754	100.22	104	3.83	11.0	0.038
Miami-Hialeah, FL	104,101	119.60	285	2.85	3.1	0.009
Naples, FL	12,386	100.18	58	4.39	0.0	0.000
Ocala, FL	16,869	100.39	62	3.44	0.0	0.000
Orlando, FL	53,345	101.32	177	3.26	17.6	0.056
Panama City, FL	6,794	100.26	17	2.39	0.0	0.000
Pensacola, FL	17,775	100.09	52	2.84	0.0	0.000
Sarasota, FL	43,952	100.16	182	4.07	5.3	0.022
Tallahassee, FL	10,506	101.73	34	3.22	0.0	0.000
Tampa, FL	193,420	111.77	654	3.38	5.9	0.020
West Palm Beach, FL	81,554	114.53	236	2.83	8.8	0.024
East South Central	1,042,331	100.18	3,149	3.01	5.5	0.016-
Kentucky	254,254	100.26	756	2.97	5.2	0.015
Lexington, KY	19,126	101.15	46	2.42	19.8	0.051
Louisville, KY-IN	66,714	100.63	196	2.94	0.0	0.000
Owensboro, KY	6,411	100.02	31	4.78	0.0	0.000
Tennessee	332,788	100.35	1,072	3.20	5.8	0.018
Chattanooga, TN-GA	30,868	100.03	114	3.67	8.3	0.031
Clarksville, TN-KY	7,508	100.05	18	2.39	0.0	0.000
Jackson, TN	6,231	100.05	19	3.14	0.0	0.000
Johnson City, TN-VA	33,143	100.02	94	2.79	0.0	0.000
Knoxville, TN	43,157	100.03	161	3.68	0.0	0.000
Memphis, TN-AR-MS	54,593	101.96	148	2.72	20.6	0.053
Nashville, TN	57,101	100.03	178	3.11	0.0	0.000

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	280,953	100.02	837	2.96	4.9	0.014
Anniston, AL	8,026	100.01	14	1.70	0.0	0.000
Birmingham, AL	67,100	100.01	223	3.32	0.0	0.000
Dothan, AL	7,698	100.04	13	1.67	0.0	0.000
Florence, AL	10,023	100.03	32	3.13	0.0	0.000
Gadsden, AL	8,717	100.02	32	3.56	0.0	0.000
Huntsville, AL	10,317	100.03	34	3.23	0.0	0.000
Mobile, AL	30,146	100.03	99	3.22	22.5	0.065
Montgomery, AL	18,505	100.03	47	2.55	41.9	0.106
Tuscaloosa, AL	8,334	100.01	19	2.28	0.0	0.000
Mississippi	174,336	100.02	484	2.80	6.5	0.017
Biloxi-Gulfport, MS	10,557	100.04	24	2.21	0.0	0.000
Jackson, MS	21,688	100.02	49	2.28	21.7	0.045
Pascagoula, MS	4,939	100.14	15	2.90	0.0	0.000
West South Central	1,538,183	100.23	4,573	2.97	7.5	0.022
Arkansas	188,729	100.03	634	3.35	8.2	0.026
Fayetteville, AR	6,985	100.03	21	3.00	0.0	0.000
Fort Smith, AR-OK	12,843	100.02	30	2.33	0.0	0.000
Little Rock, AR	31,228	100.01	100	3.20	20.5	0.063
Pine Bluff, AR	6,590	100.02	19	2.94	0.0	0.000
Louisiana	249,644	100.01	555	2.23-	9.2	0.020
Alexandria, LA	8,357	100.05	17	2.07	0.0	0.000
Baton Rouge, LA	23,757	100.02	52	2.16	0.0	0.000
Houma-Thibodaux, LA	7,965	100.00	13	1.58	0.0	0.000
Lafayette, LA	8,848	100.02	22	2.49	0.0	0.000
Lake Charles, LA	9,644	100.01	23	2.32	0.0	0.000
Monroe, LA	8,957	100.01	18	2.04	0.0	0.000
New Orleans, LA	72,951	100.01	142	1.95-	13.8	0.027
Shreveport, LA	22,565	100.01	57	2.58	19.1	0.043
Oklahoma	227,788	100.90	733	3.25	13.7	0.042
Enid, OK	5,032	100.06	17	3.46	0.0	0.000
Lawton, OK	4,841	100.00	13	2.63	0.0	0.000
Oklahoma City, OK	54,718	102.40	182	3.36	21.3	0.071
Tulsa, OK	43,520	101.62	120	2.77	7.6	0.022

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges	30-day post-admission deaths	
	Number	As percent of all enrollees		Per 1,000 non-HMD enrollees	Per 1,000 discharges
Texas	872,022	100.17	2,651	3.03	5.3
Abilene, TX	8,015	100.02	32	4.04	0.0
Amarillo, TX	11,620	100.03	30	2.55	35.2
Austin, TX	28,545	100.04	100	3.53	9.7
Beaumont, TX	25,097	100.01	78	3.07	0.0
Brazoria, TX	7,214	100.26	23	3.07	0.0
Brownsville, TX	10,957	100.13	38	3.37	0.0
Bryan, TX	4,181	100.02	12	2.90	0.0
Corpus Christi, TX	16,623	103.77	60	3.53	15.6
Dallas, TX	106,528	100.05	317	2.97	6.1
El Paso, TX	21,088	100.05	45	2.08	0.0
Fort Worth, TX	59,614	100.04	147	2.46	0.0
Galveston, TX	11,319	100.08	35	3.02	0.0
Houston, TX	112,785	100.13	306	2.67	16.4
Killeen-Temple, TX	10,177	100.02	32	3.16	0.0
Laredo, TX	4,818	100.00	16	3.34	0.0
Longview, TX	12,554	100.01	39	3.13	22.4
Lubbock, TX	11,235	100.03	58	5.10	18.2
McAllen, TX	14,488	100.14	54	3.60	0.0
Midland, TX	4,340	100.05	6	1.36	0.0
Odessa, TX	5,354	100.00	16	2.87	0.0
San Angelo, TX	6,739	100.00	21	3.12	56.0
San Antonio, TX	64,243	100.66	206	3.20	5.1
Sherman-Denison, TX	8,819	100.01	27	3.10	0.0
Texarkana, TX-AR	9,295	100.01	38	4.10	0.0
Tyler, TX	10,873	100.03	43	3.92	0.0
Victoria, TX	3,972	100.03	11	2.70	0.0
Waco, TX	14,435	100.01	53	3.71	0.0
Wichita Falls, TX	8,900	100.02	44	5.04	0.0
West	2,647,513	106.67	8,505	3.20+	9.4
Mountain	687,924	105.41	2,335	3.33+	8.9
Montana	55,084	100.10	210	3.79	4.7
Billings, MT	7,065	100.14	31	4.34	0.0
Great Falls, MT	5,256	100.06	23	4.34	0.0
Idaho	61,429	100.20	222	3.56	9.4
Boise City, ID	10,857	100.10	33	3.00	0.0
Wyoming	24,358	100.08	86	3.50	12.2
Casper, WY	3,190	100.09	14	4.34	0.0
Cheyenne, WY	4,062	100.05	12	2.92	0.0

See notes at end of table.



Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	158,266	104.96	444	2.82	7.1	0.018
Boulder-Longmont, CO	9,313	101.70	16	1.76	0.0	0.000
Colorado Springs, CO	14,852	104.61	31	2.07	0.0	0.000
Denver, CO	72,818	105.51	186	2.58	16.1	0.041
Fort Collins, CO	8,857	100.30	28	3.17	0.0	0.000
Greeley, CO	6,740	100.36	14	2.07	0.0	0.000
Pueblo, CO	9,027	104.35	26	2.86	0.0	0.000
New Mexico	71,489	107.11	226	3.11	14.3	0.041
Albuquerque, NM	20,523	119.30	50	2.41	0.0	0.000
Las Cruces, NM	5,143	100.04	20	3.81	0.0	0.000
Santa Fe, NM	4,889	106.16	13	2.63	0.0	0.000
Arizona	198,813	108.73	707	3.44	10.2	0.035
Phoenix, AZ	110,160	113.68	393	3.47	10.2	0.036
Tucson, AZ	40,906	103.78	122	2.91	8.4	0.024
Utah	73,924	100.07	303	4.02+	3.4	0.013
Provo-Orem, UT	9,133	100.08	36	3.82	0.0	0.000
Salt Lake City, UT	45,228	100.05	175	3.81	5.8	0.022
Nevada	44,561	115.00	137	2.90	17.0	0.045
Las Vegas, NV	24,748	118.61	64	2.42	0.0	0.000
Reno, NV	10,553	111.99	46	4.18	29.0	0.095
Pacific	1,959,589	107.12	6,170	3.15	9.5	0.030
Washington	269,501	107.42	949	3.53+	8.5	0.029
Bellingham, WA	7,978	100.35	36	4.56	0.0	0.000
Bremerton, WA	9,040	102.91	28	3.07	0.0	0.000
Olympia, WA	8,407	108.34	37	4.43	0.0	0.000
Richland, WA	7,039	100.16	36	4.91	0.0	0.000
Seattle, WA	95,902	113.91	344	3.63	2.8	0.010
Spokane, WA	24,743	104.98	63	2.59	0.0	0.000
Tacoma, WA	29,368	102.57	93	3.16	45.3	0.135
Vancouver, WA	10,168	121.41	42	4.08	0.0	0.000
Yakima, WA	13,093	100.23	38	2.89	0.0	0.000
Oregon	176,905	114.22	595	3.38	3.3	0.011
Eugene, OR	16,774	111.87	63	3.73	0.0	0.000
Medford, OR	11,344	100.19	28	2.44	0.0	0.000
Portland, OR	62,066	133.05	209	3.49	4.4	0.016
Salem, OR	19,714	109.33	54	2.79	0.0	0.000

See notes at end of table.

Table 3. Hysterectomy (female only): Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	1,464,248	105.87	4,500	3.08	10.8	0.034
Anaheim-Santa Ana, CA	103,566	109.92	355	3.48	14.0	0.047
Bakersfield, CA	25,196	100.20	84	3.22	28.1	0.079
Chico, CA	15,170	100.76	46	2.97	0.0	0.000
Fresno, CA	33,709	100.12	127	3.76	14.5	0.058
Los Angeles, CA	411,238	107.89	1,174	2.90	13.1	0.038
Merced, CA	7,536	100.12	25	3.23	0.0	0.000
Modesto, CA	19,591	101.11	70	3.51	0.0	0.000
Oakland, CA	112,590	100.88	308	2.74	11.8	0.035
Oxnard-Ventura, CA	29,202	105.81	107	3.63	19.1	0.067
Redding, CA	9,870	100.24	50	4.87	0.0	0.000
Riverside, CA	117,802	108.60	388	3.24	9.8	0.033
Sacramento, CA	69,614	108.15	233	3.30	17.5	0.057
Salinas, CA	16,760	100.14	57	3.39	18.5	0.059
San Diego, CA	120,369	108.36	383	3.16	7.3	0.024
San Francisco, CA	98,787	111.24	222	2.31-	0.0	0.000
San Jose, CA	63,001	100.44	196	3.11	4.9	0.015
Santa Barbara, CA	22,415	100.25	77	3.49	0.0	0.000
Santa Cruz, CA	14,666	100.23	48	3.35	0.0	0.000
Santa Rosa, CA	26,469	100.42	82	3.09	11.7	0.036
Stockton, CA	22,888	108.80	69	2.99	0.0	0.000
Vallejo, CA	20,645	101.37	60	2.88	29.8	0.095
Visalia, CA	16,268	100.09	52	3.15	20.9	0.060
Yuba City, CA	6,575	100.64	17	2.51	0.0	0.000
Alaska	8,500	100.20	25	2.75	0.0	0.000
Anchorage, AK	3,103	100.19	9	2.66	0.0	0.000
Hawaii	40,435	120.54	101	2.40	0.0	0.000
Honolulu, HI	29,658	121.25	77	2.49	0.0	0.000

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.





# Total hip replacement

Total hip replacement is most frequently performed for persons with osteoarthritis. In 1986, there were 62,829 hospitalizations for total hip replacement among aged Medicare enrollees, representing 2.35 discharges per 1,000 enrollees. The 30-day post-admission death rate was relatively low; there were only 17.5 deaths per 1,000 discharges, or slightly over 1.7 percent, suggesting that this procedure is generally performed on a relatively healthy population.

## Age and sex patterns

Across all age groups combined, women were hospitalized for this procedure nearly 40 percent more frequently than men. In the age group 85 years of age or over, there were 2.57 discharges per 1,000 women and 1.73 discharges per 1,000 men, indicating a 49-percent higher rate for women. Discharges per 1,000 enrollees were highest for the age group 75–84 years for both men and women.

Thirty-day post-admission deaths per 1,000 discharges and 30-day post-admission deaths per 1,000 enrollees both were higher for men than for women and increased substantially with age. For example, deaths per 1,000 discharges increased from 11.1 for men aged 65–74 to 77.8 for men aged 85 years of age or over.

NOTE: Total hip replacement is ICD–9–CM code 81.5.

## Patterns by race

Total hip replacement was performed at least twice as frequently for white persons as for black persons for all age and sex groups. For example, there were 2.48 discharges per 1,000 white men aged 75–84 years versus 1.07 per 1,000 black men in the same age group. Similarly, there were 3.47 discharges per 1,000 white women aged 75–84 years compared with 1.31 per 1,000 black women in the same age group.

Thirty-day post-admission deaths per 1,000 discharges showed no consistent pattern by race.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic areas. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 are derived from the data in these tables.

## Discharge rates

There was substantial regional variation in discharge rates in 1986 for total hip replacement (Figure 1). The highest rates of total hip replacement were in the Western area of the United States, particularly the Mountain Division, where the rate in Utah was 4.73 discharges per 1,000 (Table 2). The

lowest rates were in the Eastern area of the United States, particularly the Southeast. Hawaii, however, exhibited the lowest rate in the Nation, 0.90 discharges per 1,000.

As shown in Figure 2, the highest median rates of total hip replacement were in the West North Central and Mountain Divisions. The lowest median rates were in the New England, South Atlantic, East South Central, and West South Central Divisions.

Regional differences in the discharge rate for total hip replacement may reflect differences in the racial characteristics of the regions. Among white persons, there was a high rate of hospitalization for total hip replacement which might explain the high discharge rates in the Mountain and West North Central Divisions, which are predominately white. There are relatively high numbers of black persons in the Southeast, where discharge rates were low. In addition, Hawaii, with the lowest discharge rate, has relatively few white persons.

There was substantial variation in the rate of discharges per 1,000 enrollees for total hip replacement operations among MSAs. The coefficient of variation for discharges per 1,000 enrollees of 0.34 was higher than that for most of the procedures included in Volume 2, illustrating the amount of geographic variation in this elective procedure.

Nationwide, the discharge rate for total hip replacement was slightly higher in rural areas than in metropolitan areas, although discharge rates were slightly higher in metropolitan areas than in rural areas in three of the nine census divisions. Thirty-day post-admission death rates tended to be slightly higher in metropolitan areas than in rural areas for most of the census divisions.

Table 1. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	62,829	2.35	17.5	0.041
65-74 years	16,162,594	96.33	33,305	2.06	9.0	0.018
75-84 years	8,020,447	96.96	23,636	2.95	19.6	0.057
85 years or over	2,515,883	98.32	5,888	2.34	57.4	0.134
Men	10,650,991	96.01	20,521	1.93	20.4	0.039
65-74 years	7,056,445	95.90	12,524	1.77	11.1	0.019
75-84 years	2,912,366	96.02	6,815	2.34	27.6	0.064
85 years or over	582,180	97.22	1,182	1.73	77.8	0.134
Women	16,047,933	97.16	42,308	2.64	16.1	0.042
65-74 years	9,106,149	96.66	20,781	2.28	7.7	0.017
75-84 years	5,108,081	97.51	16,821	3.29	16.4	0.054
85 years or over	1,833,703	98.74	4,706	2.57	52.3	0.134
White	23,574,066	96.62	58,527	2.48	17.7	0.044
65-74 years	14,207,064	96.23	30,779	2.17	9.2	0.019
75-84 years	7,134,499	96.88	22,216	3.11	19.5	0.060
85 years or over	2,232,503	98.26	5,532	2.48	58.0	0.143
Men	9,391,016	95.94	19,142	2.04	20.8	0.042
65-74 years	6,216,472	95.83	11,640	1.87	11.3	0.021
75-84 years	2,573,989	95.94	6,390	2.48	28.0	0.069
85 years or over	600,555	97.12	1,112	1.85	78.2	0.144
Women	14,183,050	97.07	39,385	2.78	16.2	0.045
65-74 years	7,990,592	96.55	19,139	2.40	7.9	0.018
75-84 years	4,560,510	97.42	15,826	3.47	16.1	0.055
85 years or over	1,631,948	98.69	4,420	2.71	52.9	0.143
Black	1,991,943	97.86	2,165	1.09	16.2	0.017
65-74 years	1,213,014	97.54	1,239	1.02	8.1	0.008
75-84 years	583,429	98.11	711	1.22	22.5	0.027
85 years or over	195,500	99.11	215	1.10	41.9	0.046
Men	792,788	97.49	684	0.86	16.1	0.013
65-74 years	519,305	97.28	408	0.79	12.3	0.009
75-84 years	215,401	97.67	230	1.07	17.4	0.018
85 years or over	58,082	98.74	46	0.79	43.5	0.034
Women	1,199,155	98.10	1,481	1.24	16.2	0.020
65-74 years	693,709	97.74	831	1.20	6.0	0.007
75-84 years	368,028	98.37	481	1.31	24.9	0.032
85 years or over	137,418	99.26	169	1.23	41.4	0.050

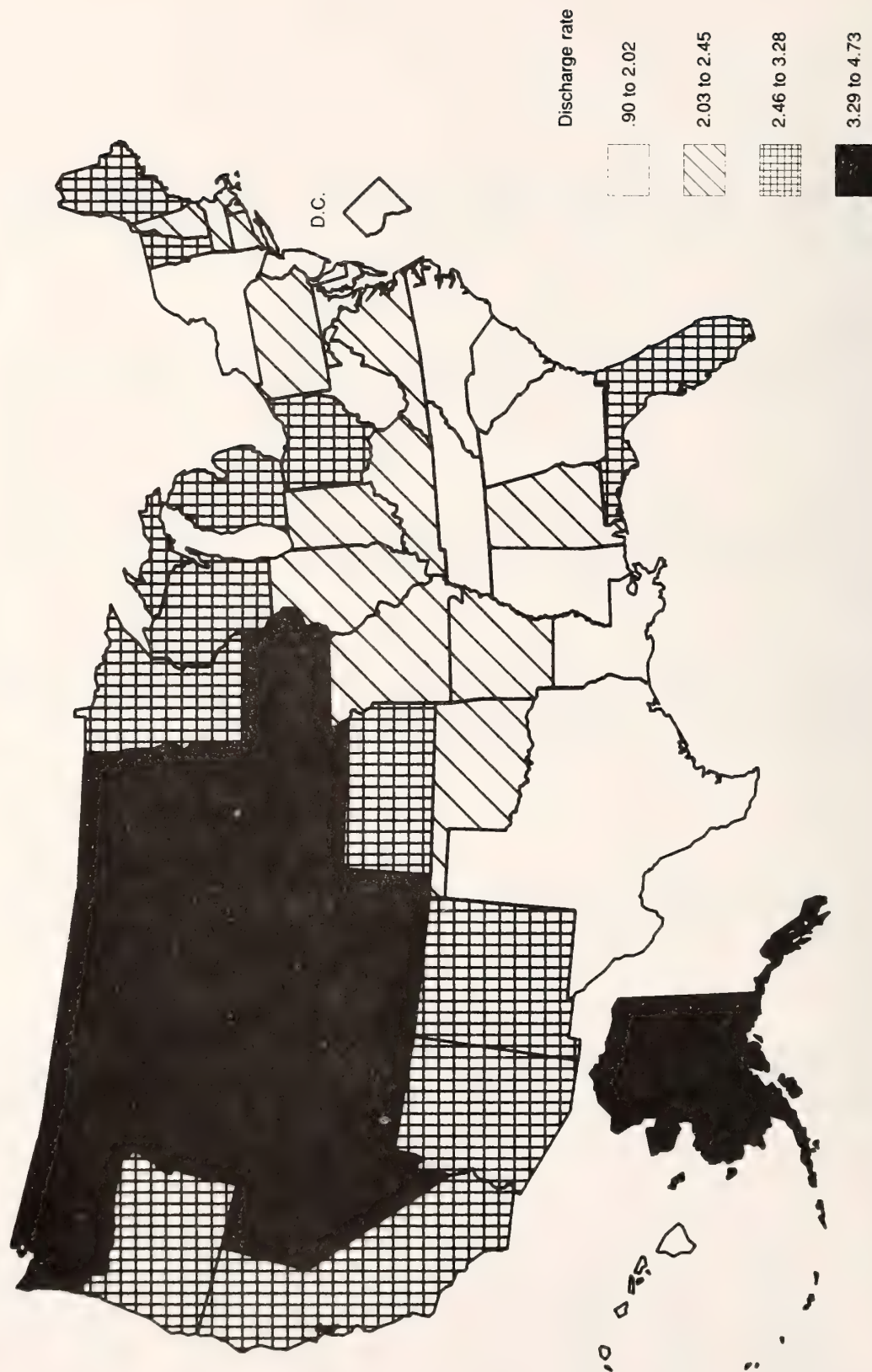
(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

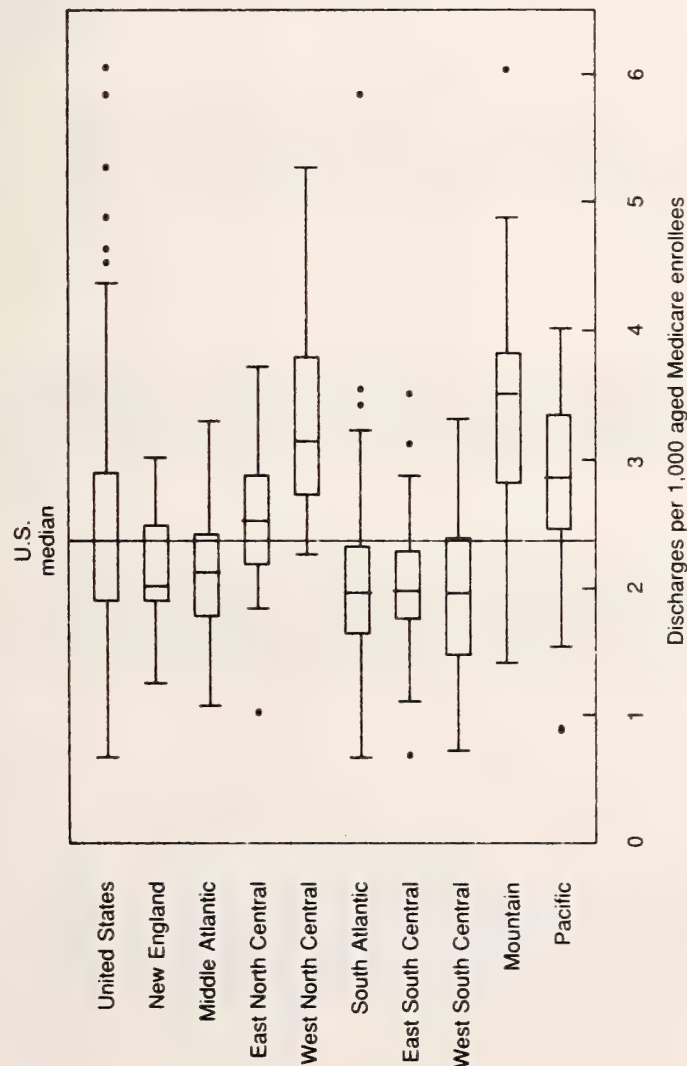


Figure 1. Total hip replacement: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Total hip replacement: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



**Outliers for discharges per 1,000 enrollees**

Area	Rural or metropolitan statistical area	Rate
United States	Cheyenne, WY	4.53
	Pueblo, CO	4.64
	Rural counties, UT	4.89
	Fargo, ND-MN	5.26
	Naples, FL	5.83
	Provo-Orem, UT	6.05
East North Central	Terre Haute, IN	1.01
South Atlantic	Asheville, NC	3.41
	Fort Myers, FL	3.55
	Naples, FL	5.83
East South Central	Anniston, AL	0.69
	Florence, AL	3.12
	Tuscaloosa, AL	3.51
Mountain	Provo-Orem, UT	6.05
Pacific	Rural counties, HI	0.88
	Honolulu, HI	0.90

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	62,829	2.35	17.5	0.041	17.5	0.041	0.041
Metropolitan	19,363,284	95.80	44,708	2.31	18.0	0.042	18.0	0.042	0.042
Rural	7,335,640	99.16	18,121	2.48+	16.4	0.039	16.4	0.039	0.039
Northeast	6,276,897	98.04	12,600	2.00-	17.9	0.036	17.9	0.036	0.036
Metropolitan	5,564,648	97.84	10,890	1.95-	18.4	0.036	18.4	0.036	0.036
Rural	712,249	99.69	1,710	2.40	15.2	0.035	15.2	0.035	0.035
New England	1,569,313	96.20	3,548	2.24	14.6	0.033	14.6	0.033	0.033
Metropolitan	1,342,886	95.66	2,950	2.18-	15.4	0.034	15.4	0.034	0.034
Rural	226,427	99.53	598	2.64	10.4	0.026	10.4	0.026	0.026
Maine	153,209	99.88	382	2.49	23.4	0.057	23.4	0.057	0.057
Metropolitan	82,345	99.89	193	2.33	32.2	0.071	32.2	0.071	0.071
Rural	70,864	99.87	189	2.67	15.1	0.041	15.1	0.041	0.041
New Hampshire	114,752	98.98	244	2.12	8.8	0.017	8.8	0.017	0.017
Metropolitan	74,135	98.55	143	1.92	14.6	0.026	14.6	0.026	0.026
Rural	40,617	99.77	101	2.49	0.0	0.000	0.0	0.000	0.000
Vermont	62,781	99.82	173	2.74	0.0	0.000	0.0	0.000	0.000
Metropolitan	10,422	99.91	20	1.90	0.0	0.000	0.0	0.000	0.000
Rural	52,359	99.80	153	2.92	0.0	0.000	0.0	0.000	0.000
Massachusetts	709,478	93.75	1,571	2.19	17.0	0.038	17.0	0.038	0.038
Metropolitan	659,025	93.40	1,437	2.15	16.3	0.036	16.3	0.036	0.036
Rural	50,453	98.58	134	2.66	27.4	0.060	27.4	0.060	0.060
Rhode Island	132,332	97.59	327	2.45	18.3	0.045	18.3	0.045	0.045
Metropolitan	132,332	97.59	327	2.45	18.3	0.045	18.3	0.045	0.045
Rural	0	0.00	0	0.00	0.0	0.000	0.0	0.000	0.000
Connecticut	396,761	97.56	851	2.14	9.3	0.020-	9.3	0.020-	0.020-
Metropolitan	384,627	97.50	830	2.16	9.4	0.020-	9.4	0.020-	0.020-
Rural	12,134	99.66	21	1.73	0.0	0.000	0.0	0.000	0.000
Middle Atlantic	4,707,584	98.68	9,052	1.92-	19.3	0.037	19.3	0.037	0.037
Metropolitan	4,221,762	98.55	7,940	1.87-	19.5	0.037	19.5	0.037	0.037
Rural	485,822	99.76	1,112	2.29	17.8	0.039	17.8	0.039	0.039
New York	2,143,249	98.98	3,889	1.80-	21.9	0.039	21.9	0.039	0.039
Metropolitan	1,922,371	98.89	3,364	1.73-	21.8	0.038	21.8	0.038	0.038
Rural	220,878	99.75	525	2.37	22.9	0.053	22.9	0.053	0.053

See notes at end of table.



Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	1,623	1.77-	19.4	0.035
Metropolitan	916,155	97.84	1,623	1.77-	19.4	0.035
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	3,540	2.15-	16.2	0.035
Metropolitan	1,383,236	98.56	2,953	2.13-	16.9	0.037
Rural	264,944	99.78	587	2.23	12.9	0.027
North Central	6,901,975	96.39	18,477	2.67+	15.5	0.039
Metropolitan	4,398,761	95.22	10,993	2.49+	17.3	0.041
Rural	2,503,214	98.51	7,484	2.98+	12.9-	0.035
East North Central	4,745,430	97.76	11,683	2.46+	16.2	0.037
Metropolitan	3,453,558	97.13	8,286	2.40	17.6	0.040
Rural	1,291,872	99.47	3,397	2.63+	12.9	0.031
Ohio	1,263,869	99.46	3,117	2.47	17.4	0.040
Metropolitan	987,528	99.60	2,433	2.47	19.1	0.045
Rural	276,341	98.95	684	2.48	11.2	0.025
Indiana	623,062	97.86	1,476	2.36	15.2	0.033
Metropolitan	399,457	97.01	914	2.28	17.3	0.038
Rural	223,605	99.41	562	2.51	11.8	0.026
Illinois	1,265,011	95.90	2,733	2.15-	19.5	0.039
Metropolitan	952,934	94.73	2,045	2.14-	21.5	0.044
Rural	312,077	99.68	688	2.19	13.7	0.027
Michigan	982,444	96.86	2,475	2.53	15.2	0.037
Metropolitan	744,347	96.06	1,783	2.40	15.1	0.035
Rural	238,097	99.44	692	2.94+	15.4	0.042
Wisconsin	611,044	99.60	1,882	3.07+	11.7	0.033
Metropolitan	369,292	99.43	1,111	2.99+	11.4	0.031
Rural	241,752	99.86	771	3.21+	12.2	0.035
West North Central	2,156,545	93.50	6,794	3.12+	14.4	0.043
Metropolitan	945,203	88.82	2,707	2.82+	16.5	0.047
Rural	1,211,342	97.51	4,087	3.35+	12.9	0.039
Minnesota	397,258	77.30	1,318	3.28+	14.8	0.045
Metropolitan	187,915	67.07	572	2.98+	17.4	0.053
Rural	209,343	89.55	746	3.55+	12.5	0.038

See notes at end of table.

Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa						
Metropolitan	404,057	99.37	1,438	3.52+	15.3	0.050
Rural	136,818	98.24	431	3.12+	16.9	0.049
	267,239	99.96	1,007	3.73+	14.7	0.051
Missouri						
Metropolitan	655,875	98.17	1,613	2.43	17.6	0.041
Rural	383,255	96.99	981	2.52	21.1	0.053
	272,620	99.88	632	2.31	11.8	0.024
North Dakota						
Metropolitan	85,433	98.28	351	4.11+	8.0	0.032
Rural	22,964	98.14	108	4.66+	7.6	0.040
	62,469	98.34	243	3.90+	8.3	0.029
South Dakota						
Metropolitan	96,216	99.59	367	3.80+	12.7	0.046
Rural	20,427	99.92	79	3.87	0.0	0.000
	75,789	99.51	288	3.79+	16.1	0.058
Nebraska						
Metropolitan	209,910	98.52	754	3.55+	11.3	0.038
Rural	70,076	95.86	206	2.90	8.2	0.027
	139,834	99.91	548	3.88+	12.7	0.044
Kansas						
Metropolitan	307,796	95.82	953	3.06+	12.9	0.039
Rural	123,748	93.24	330	2.64	14.3	0.039
	184,048	97.63	623	3.33+	12.1	0.039
South						
Metropolitan	8,980,101	97.94	18,299	2.04-	19.7	0.041
Rural	5,757,016	96.87	12,254	2.13-	18.6	0.040
	3,223,085	99.91	6,045	1.88-	21.9	0.040
South Atlantic						
Metropolitan	4,668,855	96.31	9,798	2.10-	19.5	0.043
Rural	3,313,125	94.94	7,349	2.22-	19.3	0.045
	1,355,730	99.84	2,449	1.82-	20.2	0.035
Delaware						
Metropolitan	70,251	99.94	134	1.93	18.8	0.030
Rural	44,355	99.95	95	2.16	28.0	0.048
	25,896	99.94	39	1.53	0.0	0.000
Maryland						
Metropolitan	436,606	99.49	777	1.79-	14.8	0.023
Rural	395,091	99.44	706	1.79-	16.1	0.026
	41,515	99.95	71	1.72	0.0	0.000
District of Col.						
Metropolitan	66,196	99.75	101	1.50-	17.0	0.028
Rural	0	0.00	0	1.50-	17.0	0.028
				0.00	0.0	0.000

See notes at end of table.

Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees	Per 1,000 non-HMO enrollees	Per 1,000 non-HMO enrollees
Virginia								
Metropolitan	566,135	99.91	1,159	2.05-	17.3	0.035	0.035	0.035
Rural	355,193	99.87	718	2.03-	17.7	0.035	0.035	0.035
	210,942	99.97	441	2.10	16.7	0.034	0.034	0.034
West Virginia								
Metropolitan	244,259	98.98	431	1.77-	17.0	0.028	0.028	0.028
Rural	90,704	97.39	168	1.85	33.7	0.057	0.057	0.057
	153,555	99.95	263	1.72-	7.6	0.013-	0.013-	0.013-
North Carolina								
Metropolitan	689,138	99.93	1,248	1.81-	20.4	0.035	0.035	0.035
Rural	346,905	99.89	641	1.84-	19.2	0.033	0.033	0.033
	342,233	99.96	607	1.78-	21.7	0.038	0.038	0.038
South Carolina								
Metropolitan	329,020	99.44	558	1.71-	26.5	0.043	0.043	0.043
Rural	186,873	99.05	348	1.87-	34.1	0.059	0.059	0.059
	142,147	99.95	210	1.49-	15.2	0.023	0.023	0.023
Georgia								
Metropolitan	561,716	99.71	994	1.77-	20.9	0.035	0.035	0.035
Rural	313,319	99.54	600	1.91-	10.3	0.020	0.020	0.020
	248,397	99.93	394	1.59-	39.7	0.055	0.055	0.055
Florida								
Metropolitan	1,705,534	90.97	4,396	2.59+	19.8	0.056	0.056	0.056
Rural	1,514,489	90.04	3,972	2.62+	19.7	0.058+	0.058+	0.058+
	191,045	99.17	424	2.28	21.3	0.051	0.051	0.051
East South Central								
Metropolitan	1,726,272	99.80	3,492	2.02-	20.0	0.039	0.039	0.039
Rural	873,594	99.64	1,882	2.15-	16.9	0.036	0.036	0.036
	852,678	99.97	1,610	1.89-	23.4	0.043	0.043	0.043
Kentucky								
Metropolitan	422,657	99.70	880	2.08-	18.1	0.037	0.037	0.037
Rural	183,264	99.37	441	2.39	13.8	0.033	0.033	0.033
	239,393	99.96	439	1.84-	22.2	0.041	0.041	0.041
Tennessee								
Metropolitan	550,327	99.65	1,005	1.82-	13.1	0.021-	0.021-	0.021-
Rural	342,007	99.46	621	1.81-	12.2	0.021-	0.021-	0.021-
	208,320	99.96	384	1.85-	14.6	0.024	0.024	0.024
Alabama								
Metropolitan	463,131	99.97	1,039	2.24	23.9	0.054	0.054	0.054
Rural	281,960	99.97	698	2.47	22.3	0.058	0.058	0.058
	181,171	99.97	341	1.88-	27.2	0.049	0.049	0.049
Mississippi								
Metropolitan	290,157	99.98	568	1.95-	26.4	0.053	0.053	0.053
Rural	66,363	99.96	122	1.84	19.0	0.031	0.031	0.031
	223,794	99.98	446	1.98-	28.0	0.059	0.059	0.059

See notes at end of table.



Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central						
Metropolitan	2,584,974	99.74	5,009	1.94-	19.8	0.038
Rural	1,570,297	99.59	3,023	1.93-	17.8	0.034
	1,014,677	99.97	1,986	1.96-	22.7	0.043
Arkansas						
Metropolitan	321,739	99.96	668	2.08	14.0	0.027
Rural	100,966	99.98	193	1.90	20.9	0.039
	220,773	99.95	475	2.16	11.1	0.022
Louisiana						
Metropolitan	415,968	99.98	590	1.42-	8.8	0.012-
Rural	268,137	99.98	431	1.61-	7.3	0.011-
	147,831	99.99	159	1.08-	12.7	0.012-
Oklahoma						
Metropolitan	378,716	99.02	780	2.04-	21.9	0.046
Rural	180,038	98.00	354	1.95	19.7	0.038
	198,678	99.96	426	2.13	23.5	0.052
Texas						
Metropolitan	1,468,551	99.81	2,971	2.02-	22.6	0.046
Rural	1,021,156	99.73	2,045	2.01-	19.4	0.039
	447,395	99.97	926	2.07-	29.4	0.060
West						
Metropolitan	4,539,951	93.08	13,453	2.99+	16.9	0.052+
Rural	3,642,859	91.96	10,571	2.92+	17.5	0.054+
	897,092	97.68	2,882	3.28+	14.4	0.045
Mountain						
Metropolitan	1,200,638	94.36	4,128	3.49+	18.9	0.066+
Rural	720,893	92.10	2,553	3.58+	20.9	0.078+
	479,745	97.98	1,575	3.35+	15.4	0.048
Montana						
Metropolitan	97,248	99.90	365	3.81+	8.7	0.030
Rural	21,173	99.90	68	3.24	17.6	0.049
	76,075	99.91	297	3.96+	7.0	0.026
Idaho						
Metropolitan	109,822	99.77	415	3.84+	19.3	0.073
Rural	18,471	99.90	70	3.83	0.0	0.000
	91,351	99.74	345	3.84+	23.0	0.088
Wyoming						
Metropolitan	42,408	99.91	149	3.55+	20.3	0.070
Rural	12,265	99.93	50	4.11	17.1	0.084
	30,143	99.89	99	3.32	22.4	0.065
Colorado						
Metropolitan	266,663	94.73	957	3.60+	13.8	0.052
Rural	201,737	95.23	735	3.65+	16.3	0.065
	64,926	93.22	222	3.45+	4.5-	0.015

See notes at end of table.

Table 2. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	329	2.66	24.6	0.056
Metropolitan	51,612	85.86	154	3.01	35.6	0.100
Rural	73,759	97.76	175	2.41	13.9	0.027
Arizona	348,748	91.33	1,036	3.02+	19.5	0.061
Metropolitan	257,931	89.11	826	3.23+	19.0	0.066
Rural	90,817	98.31	210	2.41	21.8	0.049
Utah	128,579	99.92	603	4.73+	22.6	0.104
Metropolitan	93,319	99.94	433	4.68+	24.5	0.111
Rural	35,260	99.88	170	4.89+	18.0	0.086
Nevada	81,799	86.15	274	3.48+	32.4	0.129
Metropolitan	64,385	84.73	217	3.50+	36.1	0.146
Rural	17,414	91.83	57	3.41	17.8	0.065
Pacific	3,339,313	92.62	9,325	2.81+	16.1	0.047
Metropolitan	2,921,966	91.93	8,018	2.76+	16.5	0.047
Rural	417,347	97.77	1,307	3.21+	13.2	0.041
Washington	461,706	92.41	1,650	3.60+	9.2-	0.034
Metropolitan	346,977	90.86	1,213	3.51+	7.8-	0.028
Rural	114,729	97.42	437	3.88+	13.5	0.053
Oregon	303,778	86.84	945	3.13+	10.5	0.032
Metropolitan	181,677	80.38	568	3.12+	7.0-	0.021
Rural	122,101	98.65	377	3.16+	15.5	0.051
California	2,477,248	93.71	6,604	2.68+	18.5	0.052
Metropolitan	2,330,007	93.36	6,166	2.66+	18.9	0.053
Rural	147,241	99.57	438	3.05+	12.4	0.035
Alaska	16,348	99.78	57	3.67	0.0	0.000
Metropolitan	5,625	99.75	21	3.91	0.0	0.000
Rural	10,723	99.80	36	3.54	0.0	0.000
Hawaii	80,233	83.64	69	0.90-	35.0	0.025
Metropolitan	57,680	83.31	50	0.90-	48.2	0.036
Rural	22,553	84.47	19	0.86-	0.0	0.000

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	62,829	2.35	17.5	0.041
Northeast	6,276,897	98.04	12,600	2.00-	17.9	0.036-
New England	1,569,313	96.20	3,548	2.24	14.6	0.033
Maine	153,209	99.88	382	2.49	23.4	0.057
Bangor, ME	16,035	99.87	49	3.04	19.1	0.061
Lewiston-Auburn, ME	13,464	99.93	17	1.25	128.5	0.145
Portland, ME	52,846	99.89	127	2.39	25.3	0.055
New Hampshire	114,752	98.98	244	2.12	8.8	0.017-
Manchester, NH	44,397	97.91	87	1.94	21.7	0.045
Portsmouth, NH	29,738	99.52	56	1.89	0.0	0.000
Vermont	62,781	99.82	173	2.74	0.0	0.000
Burlington, VT	10,422	99.91	20	1.90	0.0	0.000
Massachusetts	709,478	93.75	1,571	2.19	17.0	0.038
Boston, MA	429,794	95.67	970	2.22	20.7	0.049
New Bedford, MA	65,540	98.67	128	1.95	8.4	0.015
Pittsfield, MA	20,281	91.00	36	1.76	0.0	0.000
Springfield, MA	72,225	92.57	153	2.10	12.8	0.027
Worcester, MA	71,185	79.42	150	2.08	0.0	0.000
Rhode Island	132,332	97.59	327	2.45	18.3	0.045
Providence, RI	132,332	97.59	327	2.45	18.3	0.045
Connecticut	396,761	97.56	851	2.14	9.3	0.020-
Bridgeport, CT	96,911	96.63	148	1.53-	15.6	0.020
Hartford, CT	157,139	99.16	462	2.94+	9.8	0.031
New Haven, CT	102,964	95.31	167	1.62-	6.2	0.009
New London, CT	27,613	99.70	53	1.93	0.0	0.000

See notes at end of table.



Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Middle Atlantic	4,707,584	98.68	9,052	1.92-	19.3	0.037-		
New York	2,143,249	98.98	3,889	1.80-	21.9	0.039		
Albany, NY	115,122	98.78	223	1.92	13.6	0.026		
Binghamton, NY	35,576	99.96	76	2.13	12.1	0.028		
Buffalo, NY	134,451	98.66	336	2.50	33.0	0.093		
Elmira, NY	13,699	99.94	40	2.92	20.0	0.072		
Glens Falls, NY	15,222	99.63	31	2.03	0.0	0.000		
Nassau-Suffolk, NY	297,143	99.88	472	1.60-	19.1	0.031		
New York, NY	997,473	99.58	1,489	1.47-	29.3+	0.042		
Niagara Falls, NY	30,841	99.69	85	2.78	9.5	0.034		
Orange County, NY	30,488	99.89	63	2.06	15.4	0.032		
Poughkeepsie, NY	27,864	98.47	62	2.21	0.0	0.000		
Rochester, NY	102,542	88.80	268	2.59	7.3	0.018-		
Syracuse, NY	75,217	99.92	151	2.01	0.0	0.000		
Utica-Rome, NY	46,733	99.90	68	1.46-	0.0	0.000		
New Jersey	916,155	97.84	1,623	1.77-	19.4	0.035		
Atlantic City, NJ	46,406	97.93	113	2.42	10.8	0.021		
Bergen-Passaic, NJ	171,246	99.45	272	1.59-	12.2	0.018-		
Jersey City, NJ	64,069	99.25	69	1.07-	46.0	0.064		
Middlesex, NJ	91,009	94.70	160	1.79-	19.6	0.035		
Monmouth-Ocean, NJ	154,643	99.57	252	1.63-	11.5	0.020		
Newark, NJ	211,511	99.40	436	2.06	26.6	0.067		
Trenton, NJ	38,499	97.14	70	1.82	19.7	0.026		
Vineland, NJ	16,382	96.17	28	1.72	68.8	0.129		
Pennsylvania	1,648,180	98.75	3,540	2.15-	16.2	0.035		
Allentown, PA-NJ	94,668	99.09	200	2.12	11.2	0.022		
Altoona, PA	20,692	99.99	47	2.26	34.6	0.096		
Beaver County, PA	27,562	99.95	47	1.74	47.1	0.080		
Erie, PA	35,244	99.92	85	2.44	12.4	0.030		
Harrisburg, PA	72,929	99.95	208	2.85	13.7	0.042		
Johnstown, PA	40,260	99.97	106	2.66	17.8	0.053		
Lancaster, PA	48,045	99.93	159	3.30	21.9	0.081		
Philadelphia PA-NJ	569,054	95.81	1,088	1.90-	7.7-	0.015-		
Pittsburgh, PA	323,494	99.06	691	2.15	22.2	0.046		
Reading, PA	48,476	99.88	123	2.53	8.1	0.020		
Scranton, PA	122,888	99.95	209	1.69-	23.5	0.034		
Sharon, PA	19,009	99.97	40	2.12	20.9	0.054		
State College, PA	10,032	99.97	22	2.20	29.9	0.102		
Williamsport, PA	16,877	99.98	30	1.77	0.0	0.000		
York, PA	48,541	99.96	106	2.19	43.7	0.084		

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
North Central	6,901,975	96.39	18,477	2.67+	15.5	0.039-
East North Central	4,745,430	97.76	11,683	2.46+	16.2	0.037-
Ohio	1,263,869	99.46	3,117	2.47	17.4	0.040
Akron, OH	75,615	99.90	169	2.24	25.2	0.054
Canton, OH	51,895	99.97	142	2.76	8.0	0.020
Cincinnati, OH-KY-IN	159,407	99.96	351	2.18	25.3	0.056
Cleveland, OH	242,585	99.71	661	2.73	26.8	0.074
Columbus, OH	121,377	99.73	250	2.05	14.1	0.025
Dayton, OH	103,547	99.95	224	2.17	24.0	0.040
Hamilton, OH	26,009	99.95	53	2.03	0.0	0.000
Lima, OH	19,579	99.97	64	3.26	0.0	0.000
Lorain-Elyria, OH	27,340	99.85	70	2.60	17.3	0.039
Mansfield, OH	15,230	99.96	43	2.83	51.0	0.139
Steubenville, OH-WV	21,934	98.57	43	1.98	0.0	0.000
Toledo, OH	70,660	99.95	197	2.77	9.9	0.028
Youngstown, OH	69,319	99.95	185	2.71	6.1	0.015
Indiana	623,062	97.86	1,476	2.36	15.2	0.033
Anderson, IN	17,198	99.83	37	2.14	0.0	0.000
Bloomington, IN	7,913	99.87	23	2.89	0.0	0.000
Elkhart-Goshen, IN	15,647	99.92	30	1.91	21.5	0.062
Evansville, IN-KY	34,434	95.72	67	1.93	0.0	0.000
Fort Wayne, IN	37,565	97.77	118	3.12	10.0	0.026
Gary-Hammond, IN	61,160	97.01	138	2.29	16.6	0.035
Indianapolis, IN	118,407	93.81	257	2.16	18.8	0.043
Kokomo, IN	10,842	99.94	26	2.40	148.8	0.285
Lafayette, IN	11,228	99.92	24	2.13	0.0	0.000
Muncie, IN	13,759	99.91	32	2.31	0.0	0.000
South Bend, IN	33,170	99.93	104	3.12	30.2	0.091
Terre Haute, IN	19,585	99.89	20	1.01-	0.0	0.000
Illinois	1,265,011	95.90	2,733	2.15-	19.5	0.039
Aurora-Elgin, IL	30,946	98.68	78	2.50	54.3	0.159
Bloomington, IL	12,672	99.94	32	2.50	0.0	0.000
Champaign, IL	13,391	99.91	30	2.23	0.0	0.000
Chicago, IL	608,135	92.94	1,240	2.03-	25.2	0.048
Decatur, IL	15,992	99.97	30	1.86	38.2	0.061
Joliet, IL	28,047	97.18	67	2.39	0.0	0.000
Kankakee, IL	12,020	99.94	23	1.92	0.0	0.000
Lake County, IL	36,099	96.52	71	1.98	0.0	0.000
Peoria, IL	43,549	99.93	116	2.65	25.9	0.068
Rockford, IL	28,351	88.93	74	2.61	17.3	0.035
Springfield, IL	24,799	99.96	82	3.25	21.4	0.080

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	2,475	2.53	15.2	0.037
Ann Arbor, MI	17,760	95.12	48	2.69	23.1	0.055
Battle Creek, MI	16,831	99.89	31	1.84	0.0	0.000
Benton Harbor, MI	21,618	99.88	79	3.68	15.1	0.047
Detroit, MI	448,826	96.43	951	2.13	14.0	0.029-
Flint, MI	43,084	91.01	109	2.52	28.5	0.071
Grand Rapids, MI	64,091	95.42	161	2.50	7.3	0.015
Jackson, MI	17,046	99.82	45	2.65	20.3	0.060
Kalamazoo, MI	21,512	99.85	59	2.72	0.0	0.000
Lansing, MI	32,460	90.23	82	2.51	0.0	0.000
Muskegon, MI	18,957	98.06	69	3.67	16.2	0.055
Saginaw, MI	42,162	96.18	149	3.55+	28.6	0.124
Wisconsin	611,044	99.60	1,882	3.07+	11.7	0.033
Appleton, WI	34,483	99.96	114	3.29	0.0	0.000
Eau Claire, WI	16,955	99.94	63	3.72	0.0	0.000
Green Bay, WI	19,185	99.97	69	3.57	25.9	0.104
Janesville, WI	16,529	99.85	47	2.81	23.5	0.058
Kenosha, WI	14,291	99.91	41	2.87	21.9	0.069
LaCrosse, WI	11,858	99.91	28	2.33	0.0	0.000
Madison, WI	30,776	99.74	104	3.36	11.0	0.031
Milwaukee, WI	166,813	99.21	488	2.90+	10.9	0.029
Racine, WI	20,503	99.90	49	2.39	0.0	0.000
Sheboygan, WI	14,461	99.98	34	2.34	30.1	0.067
Wausau, WI	12,945	99.95	40	3.11	29.8	0.076
West North Central	2,156,545	93.50	6,794	3.12+	14.4	0.043
Minnesota	397,258	77.30	1,318	3.28+	14.8	0.045
Duluth, MN-WI	29,977	76.74	77	2.55	0.0	0.000
Minneapolis, MN-WI	141,769	64.45	433	2.98+	16.7	0.051
Rochester, MN	9,393	99.67	38	3.96	47.2	0.197
St. Cloud, MN	12,248	70.92	40	3.23	22.3	0.071
Iowa	404,057	99.37	1,438	3.52+	15.3	0.050
Cedar Rapids, IA	19,323	99.94	53	2.72	0.0	0.000
Davenport, IA-IL	44,646	99.94	104	2.32	0.0	0.000
Des Moines, IA	40,067	94.50	106	2.61	0.0	0.000
Dubuque, IA	11,460	99.95	40	3.44	90.9	0.256
Iowa City, IA	6,240	99.90	21	3.31	0.0	0.000
Sioux City, IA-NE	15,951	99.96	56	3.47	11.9	0.058
Waterloo, IA	19,521	99.96	85	4.34+	35.5	0.149

See notes at end of table.



Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	1,613	2.43	17.6	0.041
Columbia, MO	8,560	99.98	24	2.78	0.0	0.000
Joplin, MO	19,275	99.95	47	2.41	23.9	0.052
Kansas City, MO-KS	154,919	95.72	408	2.60	23.0	0.063
St. Joseph, MO	13,630	99.97	39	2.81	30.5	0.070
St. Louis, MO-IL	283,167	97.43	646	2.25	14.5	0.031
Springfield, MO	27,676	99.94	76	2.72	26.6	0.071
North Dakota	85,433	98.28	351	4.11+	8.0	0.032
Bismarck, ND	8,160	95.13	34	4.13	0.0	0.000
Fargo, ND-MN	14,138	96.57	75	5.26+	9.8	0.063
Grand Forks, ND	5,687	99.95	17	2.96	0.0	0.000
South Dakota	96,216	99.59	367	3.80+	12.7	0.046
Rapid City, SD	7,152	99.89	27	3.80	0.0	0.000
Sioux Falls, SD	13,275	99.93	52	3.90	0.0	0.000
Nebraska	209,910	98.52	754	3.55+	11.3	0.038
Lincoln, NE	20,994	98.50	84	3.93	0.0	0.000
Omaha, NE-IA	57,609	95.39	150	2.58	11.4	0.033
Kansas	307,796	95.82	953	3.06+	12.9	0.039
Lawrence, KS	4,965	87.78	15	2.98	0.0	0.000
Topeka, KS	18,983	97.26	55	2.84	19.7	0.048
Wichita, KS	45,844	88.57	141	3.04	11.2	0.042
South	8,980,101	97.94	18,299	2.04-	19.7	0.041
South Atlantic	4,668,855	96.31	9,798	2.10-	19.5	0.043
Delaware	70,251	99.94	134	1.93	18.8	0.030
Wilmington, DE-NJ-MD	58,114	99.65	118	2.05	34.4	0.054
Maryland	436,606	99.49	777	1.79-	14.8	0.023-
Baltimore, MD	244,878	99.90	440	1.80-	10.5	0.017-
Cumberland, MD-WV	17,051	99.95	34	1.99	66.5	0.122
Hagerstown, MD	14,522	99.95	24	1.66	0.0	0.000
District of Col.	66,196	99.75	101	1.50-	17.0	0.028
Washington, DC-MD-VA	261,121	99.05	484	1.86-	17.0	0.031

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Virginia	566,135	99.91	1,159	2.05-	17.3	0.035
Charlottesville, VA	12,020	99.92	20	1.66	0.0	0.000
Danville, VA	15,532	99.99	20	1.29	0.0	0.000
Lynchburg, VA	18,110	99.99	30	1.64	0.0	0.000
Norfolk, VA	102,601	99.96	175	1.72-	26.4	0.041
Richmond, VA	85,698	99.98	220	2.56	17.8	0.048
Roanoke, VA	30,622	99.98	56	1.80	16.7	0.031
West Virginia	244,259	98.98	431	1.77-	17.0	0.028
Charleston, WV	34,215	99.96	55	1.61	35.3	0.061
Huntington, WV-KY-OH	40,891	99.95	69	1.69	14.8	0.024
Parkersburg, WV-OH	19,888	99.94	53	2.65	59.6	0.148
Wheeling, WV-OH	22,016	82.51	41	1.85	32.2	0.046
North Carolina	689,138	99.93	1,248	1.81-	20.4	0.035
Asheville, NC	24,469	99.92	84	3.41	43.0	0.120
Burlington, NC	14,505	99.99	10	0.69-	0.0	0.000
Charlotte, NC	109,337	99.79	198	1.81-	0.0	0.000
Fayetteville, NC	13,388	99.98	9	0.68-	0.0	0.000
Greensboro, NC	99,387	99.97	192	1.93	27.2	0.053
Hickory, NC	23,392	99.97	47	2.02	22.9	0.047
Jacksonville, NC	5,134	99.86	11	2.18	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	98	1.72	22.1	0.037
Wilmington, NC	12,634	99.97	12	0.96-	0.0	0.000
South Carolina	329,020	99.44	558	1.71-	26.5	0.043
Anderson, SC	16,583	99.70	23	1.39	42.4	0.066
Charleston, SC	34,246	98.90	51	1.50-	48.5	0.065
Columbia, SC	35,361	99.98	73	2.08	0.0	0.000
Florence, SC	11,195	99.96	14	1.26	0.0	0.000
Greenville, SC	65,893	98.01	144	2.19	49.8	0.100
Georgia	561,716	99.71	994	1.77-	20.9	0.035
Albany, GA	9,292	99.92	23	2.48	0.0	0.000
Athens, GA	13,510	99.96	31	2.28	0.0	0.000
Atlanta, GA	189,539	99.27	383	2.01	12.5	0.028
Augusta, GA-SC	32,938	99.93	47	1.43-	43.9	0.066
Columbus, GA-AL	22,847	99.96	48	2.10	24.3	0.048
Macon, GA	25,929	99.97	41	1.58	0.0	0.000
Savannah, GA	25,338	99.94	45	1.78	0.0	0.000

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	4,396	2.59+	19.8	0.056
Bradenton, FL	42,906	99.68	100	2.32	13.9	0.044
Daytona Beach, FL	62,616	92.90	186	2.98	13.6	0.047
Fort Lauderdale, FL	181,839	81.09	499	2.69	12.1	0.037
Fort Myers, FL	61,428	99.65	212	3.55+	35.8	0.143
Fort Pierce, FL	41,198	99.28	87	2.17	27.0	0.053
FT. Walton Beach, FL	10,169	99.88	16	1.63	0.0	0.000
Gainesville, FL	16,758	99.58	41	2.47	45.9	0.123
Jacksonville, FL	80,895	98.22	215	2.67	40.5	0.130
Lakeland, FL	55,495	99.56	108	1.97	0.0	0.000
Melbourne, FL	46,501	99.72	116	2.57	20.6	0.049
Miami-Hialeah, FL	168,502	79.57	391	2.27	23.7	0.063
Naples, FL	23,433	99.75	132	5.83+	19.6	0.143
Ocala, FL	31,367	99.50	68	2.25	0.0	0.000
Orlando, FL	90,604	98.55	220	2.45	12.5	0.035
Panama City, FL	11,817	99.70	27	2.33	46.2	0.094
Pensacola, FL	29,972	99.89	46	1.56	21.1	0.036
Sarasota, FL	77,895	99.81	251	3.24+	3.7-	0.012-
Tallahassee, FL	17,414	97.85	25	1.44	0.0	0.000
Tampa, FL	323,951	87.05	842	2.59	28.2	0.084
West Palm Beach, FL	139,729	85.22	390	2.79	6.9	0.021
East South Central	1,726,272	99.80	3,492	2.02-	20.0	0.039
Kentucky	422,657	99.70	880	2.08	18.1	0.037
Lexington, KY	31,008	98.87	64	2.06	21.5	0.032
Louisville, KY-IN	107,485	99.20	312	2.88	6.1	0.019-
Owensboro, KY	10,319	99.96	16	1.54	0.0	0.000
Tennessee	550,327	99.65	1,005	1.82-	13.1	0.021-
Chattanooga, TN-GA	50,061	99.97	76	1.51-	31.3	0.041
Clarksville, TN-KY	12,541	99.91	22	1.75	42.1	0.078
Jackson, TN	10,064	99.95	16	1.56	0.0	0.000
Johnson City, TN-VA	55,068	99.97	96	1.75	24.1	0.038
Knoxville, TN	70,970	99.96	141	1.99	0.0	0.000
Memphis, TN-AR-MS	88,836	98.06	99	1.11-	0.0	0.000
Nashville, TN	92,994	99.96	231	2.47	12.5	0.033

See notes at end of table.



Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees		
Alabama	463,131	99.97	1,039	2.24	23.9	0.054		
Anniston, AL	13,124	99.97	9	0.69-	0.0	0.000		
Birmingham, AL	108,546	99.98	296	2.70	34.9	0.112		
Dothan, AL	12,690	99.94	30	2.36	0.0	0.000		
Florence, AL	16,687	99.97	52	3.12	19.7	0.062		
Gadsden, AL	14,295	99.97	29	2.03	0.0	0.000		
Huntsville, AL	17,137	99.96	38	2.23	0.0	0.000		
Mobile, AL	50,513	99.96	115	2.29	0.0	0.000		
Montgomery, AL	29,832	99.97	68	2.26	31.6	0.069		
Tuscaloosa, AL	13,604	99.99	48	3.51	0.0	0.000		
Mississippi	290,157	99.98	568	1.95-	26.4	0.053		
Biloxi-Gulfport, MS	18,079	99.97	32	1.79	34.1	0.059		
Jackson, MS	35,305	99.98	62	1.74	19.0	0.027		
Pascagoula, MS	8,556	99.88	18	2.15	0.0	0.000		
West South Central	2,584,974	99.74	5,009	1.94-	19.8	0.038-		
Arkansas	321,739	99.96	668	2.08	14.0	0.027		
Fayetteville, AR	11,803	99.95	33	2.80	0.0	0.000		
Fort Smith, AR-OK	21,413	99.98	29	1.35-	0.0	0.000		
Little Rock, AR	50,966	99.99	100	1.95	35.8	0.059		
Pine Bluff, AR	11,012	99.98	30	2.71	30.2	0.085		
Louisiana	415,968	99.98	590	1.42-	8.8	0.012-		
Alexandria, LA	13,819	99.96	22	1.59	0.0	0.000		
Baton Rouge, LA	39,583	99.97	81	2.06	0.0	0.000		
Houma-Thibodaux, LA	13,501	100.00	22	1.66	0.0	0.000		
Lafayette, LA	14,620	99.99	20	1.37	0.0	0.000		
Lake Charles, LA	16,436	99.98	30	1.85	0.0	0.000		
Monroe, LA	14,648	99.99	11	0.75-	0.0	0.000		
New Orleans, LA	118,708	99.98	199	1.67-	9.2	0.016-		
Shreveport, LA	36,822	99.98	46	1.24-	26.3	0.026		
Oklahoma	378,716	99.02	780	2.04-	21.9	0.046		
Enid, OK	8,215	99.94	25	2.99	0.0	0.000		
Lawton, OK	8,221	99.99	15	1.85	0.0	0.000		
Oklahoma City, OK	88,646	97.45	189	2.11	32.2	0.066		
Tulsa, OK	71,032	98.13	120	1.68-	8.1	0.014		

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	2,971	2.02-	22.6	0.046
Abilene, TX	13,100	99.96	16	1.21	0.0	0.000
Amarillo, TX	19,063	99.97	46	2.40	23.8	0.055
Austin, TX	47,578	99.95	77	1.62-	14.0	0.021
Beaumont, TX	42,323	99.98	78	1.84	34.6	0.073
Brazoria, TX	12,486	99.78	32	2.61	47.1	0.089
Brownsville, TX	20,169	99.86	50	2.53	38.6	0.151
Bryan, TX	6,955	99.96	16	2.29	0.0	0.000
Corpus Christi, TX	28,417	95.56	69	2.45	0.0	0.000
Dallas, TX	172,118	99.95	378	2.18	23.8	0.054
El Paso, TX	37,292	99.94	64	1.75	0.0	0.000
Fort Worth, TX	97,947	99.96	276	2.81	33.0	0.095
Galveston, TX	19,376	99.94	41	2.14	62.3	0.110
Houston, TX	187,992	99.85	354	1.89-	11.4	0.022
Killeen-Temple, TX	17,182	99.97	19	1.11-	0.0	0.000
Laredo, TX	8,421	99.99	6	0.72-	0.0	0.000
Longview, TX	20,547	99.98	31	1.49	0.0	0.000
Lubbock, TX	18,957	99.97	63	3.32	0.0	0.000
McAllen, TX	27,402	99.82	51	1.91	0.0	0.000
Midland, TX	7,362	99.96	18	2.47	0.0	0.000
Odessa, TX	9,207	99.99	9	0.99-	0.0	0.000
San Angelo, TX	11,213	99.99	27	2.39	0.0	0.000
San Antonio, TX	107,989	99.28	156	1.45-	21.7	0.028
Sherman-Denison, TX	14,532	99.99	47	3.20	45.6	0.135
Texarkana, TX-AR	15,315	99.99	14	0.91-	0.0	0.000
Tyler, TX	18,223	99.98	45	2.47	0.0	0.000
Victoria, TX	6,871	99.97	11	1.62	0.0	0.000
Waco, TX	23,624	99.99	25	1.05-	0.0	0.000
Wichita Falls, TX	14,462	99.97	32	2.19	28.6	0.058
West	4,539,951	93.08	13,453	2.99+	16.9	0.052+
Mountain	1,200,638	94.36	4,128	3.49+	18.9	0.066+
Montana	97,248	99.90	365	3.81+	8.7	0.030
Billings, MT	12,097	99.88	44	3.67	25.4	0.085
Great Falls, MT	9,076	99.91	24	2.67	0.0	0.000
Idaho	109,822	99.77	415	3.84+	19.3	0.073
Boise City, ID	18,471	99.90	70	3.83	0.0	0.000
Wyoming	42,408	99.91	149	3.55+	20.3	0.070
Casper, WY	5,379	99.91	19	3.58	0.0	0.000
Cheyenne, WY	6,886	99.96	31	4.53	31.6	0.149

See notes at end of table.

Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Colorado	266,663	94.73	957	3.60+	13.8	0.052		
Boulder-Longmont, CO	15,143	97.96	50	3.28	0.0	0.000		
Colorado Springs, CO	24,899	95.03	82	3.33	12.3	0.042		
Denver, CO	119,624	94.10	443	3.71+	19.4	0.076		
Fort Collins, CO	15,089	99.71	57	3.80	0.0	0.000		
Greeley, CO	11,610	99.62	32	2.77	87.4	0.169		
Pueblo, CO	15,372	94.43	71	4.64+	9.8	0.065		
New Mexico	125,371	92.49	329	2.66	24.6	0.056		
Albuquerque, NM	33,783	81.01	121	3.59	37.7	0.124		
Las Cruces, NM	9,375	99.94	21	2.30	40.9	0.111		
Santa Fe, NM	8,454	93.66	12	1.43	0.0	0.000		
Arizona	348,748	91.33	1,036	3.02+	19.5	0.061		
Phoenix, AZ	187,381	86.74	634	3.41+	21.5	0.079		
Tucson, AZ	70,550	96.06	192	2.75	10.4	0.029		
Utah	128,579	99.92	603	4.73+	22.6	0.104		
Provo-Orem, UT	16,076	99.93	96	6.05+	40.3	0.194		
Salt Lake City, UT	77,243	99.94	337	4.39+	21.0	0.093		
Nevada	81,799	86.15	274	3.48+	32.4	0.129		
Las Vegas, NV	45,252	82.98	164	3.78+	40.3	0.185		
Reno, NV	19,133	89.17	53	2.86	20.7	0.058		
Pacific	3,339,313	92.62	9,325	2.81+	16.1	0.047		
Washington	461,706	92.41	1,650	3.60+	9.2-	0.034		
Bellevue, WA	13,629	99.51	52	3.82	0.0	0.000		
Bremerton, WA	15,439	96.59	53	3.46	0.0	0.000		
Olympia, WA	14,254	90.98	44	3.10	0.0	0.000		
Richland, WA	12,559	99.85	35	2.86	0.0	0.000		
Seattle, WA	159,828	86.57	588	3.69+	10.7	0.043		
Spokane, WA	41,237	94.51	131	3.17	6.7	0.023		
Tacoma, WA	50,245	97.24	173	3.48+	11.4	0.040		
Vancouver, WA	17,048	80.32	52	3.07	0.0	0.000		
Yakima, WA	22,738	99.74	85	3.76	0.0	0.000		
Oregon	303,778	86.84	945	3.13+	10.5	0.032		
Eugene, OR	28,947	88.67	61	2.13	0.0	0.000		
Medford, OR	20,326	99.78	69	3.45	13.1	0.050		
Portland, OR	99,155	72.79	304	3.03+	9.6	0.029		
Salem, OR	33,249	90.39	134	4.01+	0.0	0.000		

See notes at end of table.



Table 3. Total hip replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
California	2,477,248	93.71	6,604	2.68+	18.5	0.052
Anaheim-Santa Ana, CA	167,171	89.39	483	2.87+	24.0	0.077
Bakersfield, CA	44,969	99.76	91	2.06	0.0	0.000
Chico, CA	27,102	99.09	63	2.37	43.3	0.114
Fresno, CA	58,425	99.90	120	2.07	36.0	0.084
Los Angeles, CA	677,939	91.40	1,781	2.63+	25.8	0.072+
Merced, CA	13,462	99.86	20	1.52	0.0	0.000
Modesto, CA	33,619	98.80	67	2.01	13.7	0.030
Oakland, CA	188,258	99.08	453	2.42	17.0	0.042
Oxnard-Ventura, CA	49,488	93.74	131	2.66	0.0	0.000
Redding, CA	17,796	99.73	52	3.00	16.5	0.061
Riverside, CA	203,246	90.92	630	3.13+	17.9	0.065
Sacramento, CA	120,273	91.81	280	2.36	14.3	0.035
Salinas, CA	29,131	99.86	94	3.26	10.7	0.034
San Diego, CA	205,402	91.35	545	2.68	10.8	0.030
San Francisco, CA	163,753	89.02	454	2.76	22.4	0.064
San Jose, CA	105,258	99.50	261	2.49	11.2	0.029
Santa Barbara, CA	38,021	99.70	133	3.50	0.0	0.000
Santa Cruz, CA	24,640	99.77	71	2.86	13.5	0.037
Santa Rosa, CA	44,775	99.49	146	3.26	0.0	0.000
Stockton, CA	40,855	91.54	91	2.26	10.5	0.024
Vallejo, CA	35,778	98.59	100	2.83	0.0	0.000
Visalia, CA	28,811	99.91	71	2.49	26.0	0.069
Yuba City, CA	11,835	99.35	29	2.50	33.3	0.089
Alaska	16,348	99.78	57	3.67	0.0	0.000
Anchorage, AK	5,625	99.75	21	3.91	0.0	0.000
Hawaii	80,233	83.64	69	0.90-	35.0	0.025
Honolulu, HI	57,680	83.31	50	0.90-	48.2	0.036

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Reduction of fracture of the femur

There were 187,739 hospitalizations for fracture of the neck of the femur among the Medicare aged in 1986. The most common method used to treat such fractures was open or closed reduction; there were 118,379 hospitalizations involving reduction of fracture of the femur in 1986. An additional major treatment is other arthroplasty of the hip, which is described in the following chapter.

Reduction of fracture of the femur was one of the most common procedures performed on the Medicare aged in 1986, with 4.43 hospital discharges per 1,000 enrollees involving this procedure. The 30-day post-admission death rate was relatively high compared with that for other surgical procedures, 59.1 deaths per 1,000 discharges (nearly 6 percent), or 0.261 deaths per 1,000 enrollees.

## Age and sex patterns

Women were much more prone to experience a fracture of the femur than men. This reflects the fact that osteoporosis, a common underlying cause of hip fracture, is much more frequent among women than among men. As indicated in Table 1, reduction of fracture of the femur was performed about twice as frequently on women as on men (5.83 discharges versus 2.33). This was true across all age groups.

NOTE: Reduction of fracture of the femur is ICD-9-CM codes 79.05, 79.15, 79.25, 79.35.

The frequency with which this procedure was performed increased rapidly with age. Among women, for example, 2.12 procedures were performed per 1,000 enrollees aged 65-74 years, and 19.11 procedures were performed per 1,000 enrollees 85 years of age or over, a ninefold increase.

Thirty-day post-admission deaths per 1,000 discharges increased rapidly with age for both men and women. For men and women combined, death rates more than doubled, from 34.7 per 1,000 discharges for the age group 65-74 years to 82.5 for the group 85 years of age or over.

## Patterns by race

White enrollees underwent reduction of fracture of the femur substantially more frequently than black enrollees across all age and sex groups. For example, the discharge rate for white men aged 75-84 years was 3.83 per 1,000 enrollees versus 1.94 for black men of the same age. Similarly, white women aged 75-84 years had a discharge rate of 8.11 per 1,000 enrollees versus 2.91 for black women of that age. These differences reflect the fact that osteoporosis is more common among white than among black persons.

The 30-day post-admission death rate per 1,000 discharges was similar for black and white enrollees for most age and sex groups. An exception was for women 85 years of age or over, where white women experienced 71.7 deaths per 1,000 discharges versus 50.8

per 1,000 for black women. White men aged 65-74 years also had a higher 30-day post-admission death rate than black men of that age, but the small number of black men aged 65-74 years undergoing this procedure produces a rather unstable estimate of deaths per 1,000 discharges for this group.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 are derived from the data in these tables.

## Discharge rates

Reduction of fracture of the femur was most commonly performed in the southwestern area of the United States (Figure 1). The highest rate was recorded in Nevada, with 5.43 procedures per 1,000 enrollees. The States with the lowest rates of discharge tended to be on the east coast, although there were several exceptions. The lowest discharge rate occurred in the District of Columbia, with 2.48 discharges per 1,000 enrollees. This may be partially the result of a large black population that tends to experience a relatively low discharge rate for this procedure nationally. (It may also be a

reflection of incomplete claims reporting, as explained in the Methods section of the Introduction.) The census division with the highest median discharge rate was the West South Central; the division with the lowest median rate was the Middle Atlantic (Figure 2).

Nationwide, the variation in discharge rates among MSAs was not great. The coefficient of variation for discharges per 1,000 enrollees was only 0.15, the lowest of any procedure included in this volume. This is probably because of the nonelective nature of the procedure. Similarly, discharges per 1,000 enrollees for fracture of the neck of the femur had the lowest coefficient of variation (0.13), along with all cancers, of all the diagnostic categories examined for Volume 1.

## Post-admission death rates

Thirty-day post-admission mortality rates did not exhibit a strong regional pattern. Several of the States with the highest rates were in the Midwest section of the United States, although the highest 30-day post-admission mortality rate was in Alaska (138.5 deaths per 1,000 discharges). The States with the lowest rates tended to be in the West and the Northeast. The lowest rate was found in Hawaii (40.7 deaths per 1,000 discharges).

## Urban-rural patterns

Nationwide and in most census regions, discharge rates and 30-day post-admission death rates were very similar for urban and rural areas.



Table 1. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

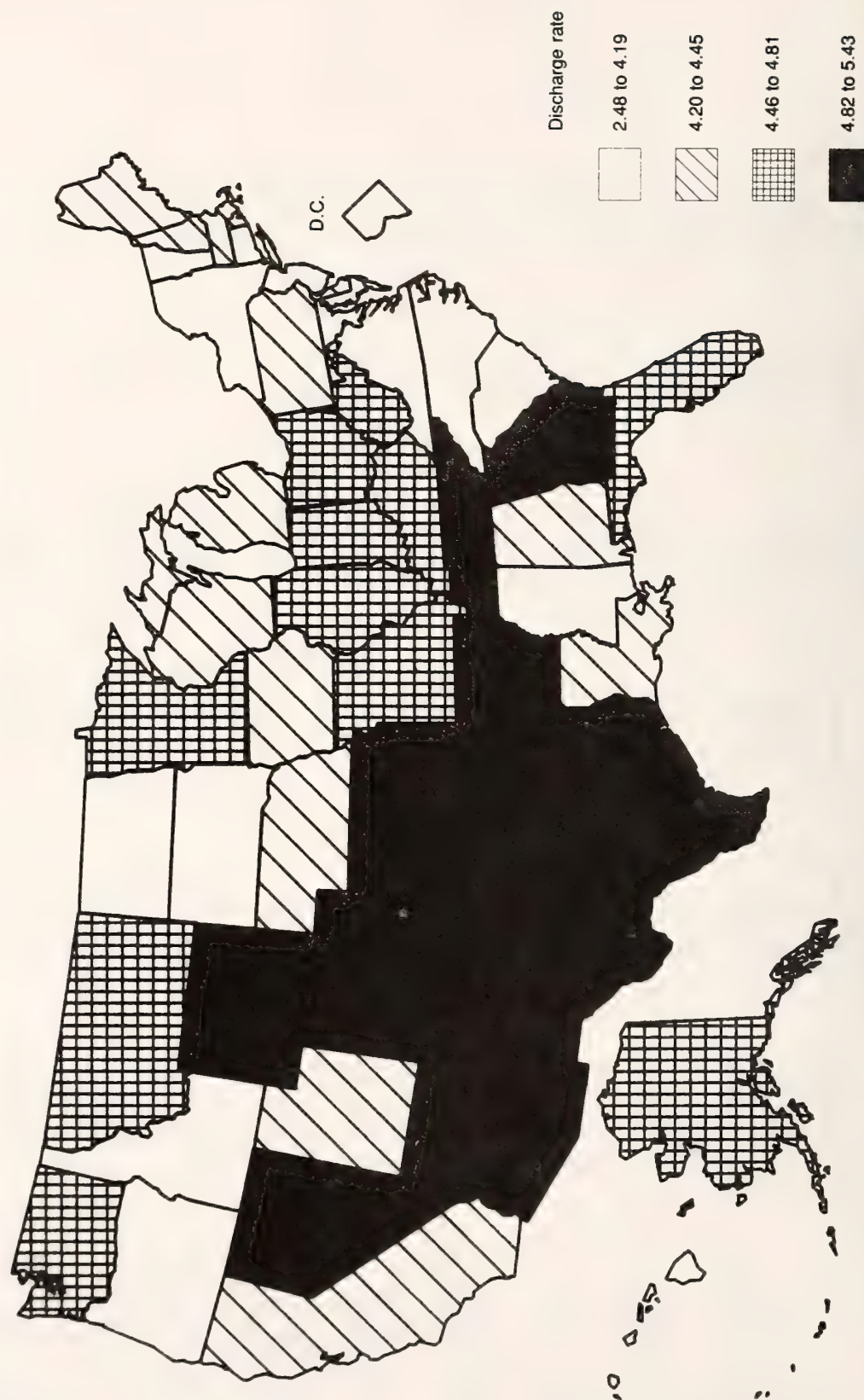
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	118,379	4.43	59.1	0.261
65-74 years	16,162,594	96.33	26,642	1.65	34.7	0.057
75-84 years	8,020,447	96.96	49,918	6.22	52.4	0.326
85 years or over	2,515,883	98.32	41,819	16.62	82.5	1.371
Men	10,650,991	96.01	24,793	2.33	95.3	0.221
65-74 years	7,056,445	95.90	7,353	1.04	54.9	0.057
75-84 years	2,912,366	96.02	10,666	3.66	93.1	0.340
85 years or over	682,180	97.22	6,774	9.93	142.5	1.414
Women	16,047,933	97.16	93,586	5.83	49.5	0.288
65-74 years	9,106,149	96.66	19,289	2.12	27.0	0.057
75-84 years	5,108,081	97.51	39,252	7.68	41.3	0.317
85 years or over	1,833,703	98.74	35,045	19.11	70.9	1.355
White	23,574,066	96.62	110,531	4.69	59.7	0.279
65-74 years	14,207,064	96.23	24,413	1.72	34.7	0.059
75-84 years	7,134,499	96.88	46,830	6.56	52.6	0.345
85 years or over	2,232,503	98.26	39,288	17.60	83.6	1.470
Men	9,391,016	95.94	22,866	2.43	97.3	0.237
65-74 years	6,216,472	95.83	6,640	1.07	56.8	0.060
75-84 years	2,573,989	95.94	9,862	3.83	93.9	0.359
85 years or over	600,555	97.12	6,364	10.60	145.0	1.536
Women	14,183,050	97.07	87,665	6.18	49.8	0.308
65-74 years	7,990,592	96.55	17,773	2.22	26.5	0.058
75-84 years	4,560,510	97.42	36,968	8.11	41.6	0.337
85 years or over	1,631,948	98.69	32,924	20.17	71.7	1.446
Black	1,991,943	97.86	3,972	1.99	51.4	0.102
65-74 years	1,213,014	97.54	1,162	0.96	31.8	0.030
75-84 years	583,429	98.11	1,490	2.55	53.0	0.135
85 years or over	195,500	99.11	1,320	6.75	66.7	0.450
Men	792,788	97.49	1,092	1.38	75.1	0.103
65-74 years	519,305	97.28	436	0.84	27.5	0.023
75-84 years	215,401	97.67	418	1.94	88.5	0.171
85 years or over	58,082	98.74	238	4.10	138.7	0.568
Women	1,199,155	98.10	2,880	2.40	42.4	0.101
65-74 years	693,709	97.74	726	1.05	34.4	0.036
75-84 years	368,028	98.37	1,072	2.91	39.2	0.114
85 years or over	137,418	99.26	1,082	7.87	50.8	0.400

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

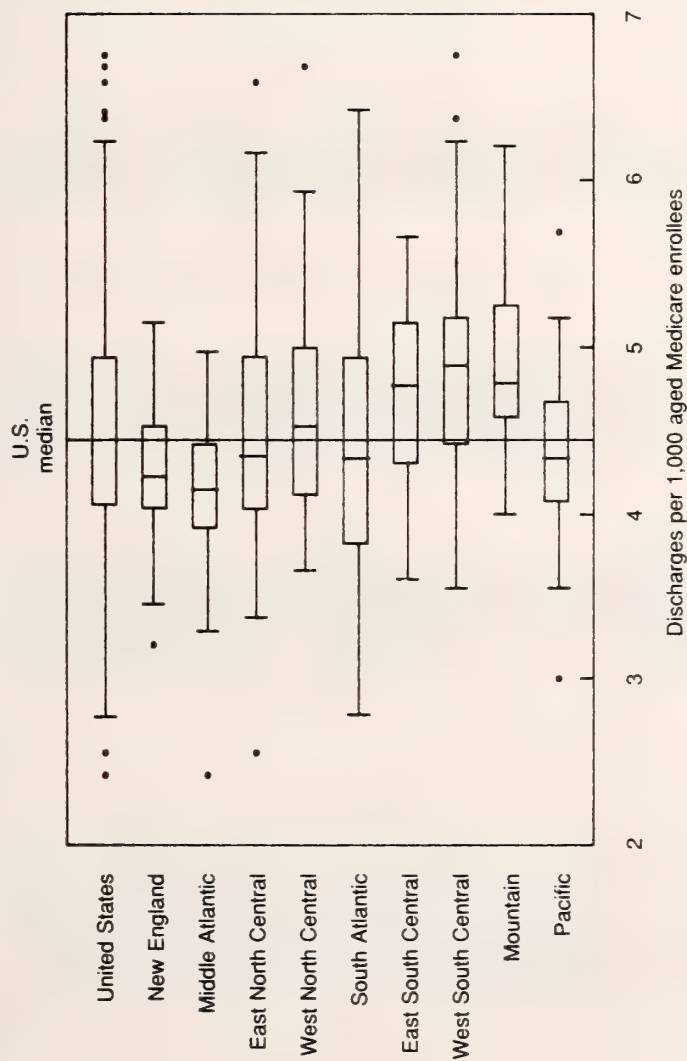
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Reduction of fracture of the femur: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 2. Reduction of fracture of the femur: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



**Outliers for discharges per 1,000 enrollees**

Area	Rural or metropolitan statistical area	Rate
United States	Elmira, NY	2.41
	Gary-Hammond, IN	2.56
	Abilene, TX	6.39
	Parkersburg, WV-OH	6.42
	La Crosse, WI	6.59
	Dubuque, IA	6.67
New England	Bryan, TX	6.73
	New Bedford, MA	3.20
Middle Atlantic	Elmira, NY	2.41
East North Central	Gary-Hammond, IN	2.56
	La Crosse, WI	6.59
West North Central	Dubuque, IA	6.67
West South Central	Abilene, TX	6.39
	Bryan, TX	6.73
Pacific	Rural counties, HI	3.00
	Yuba City, CA	5.69

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	118,379	4.43	59.1	0.261
Metropolitan	19,363,284	95.80	86,171	4.44	58.5	0.260
Rural	7,335,640	99.16	32,208	4.42	60.6	0.264
Northeast	6,276,897	98.04	26,841	4.19-	54.3-	0.231-
Metropolitan	5,564,648	97.84	23,936	4.20-	53.4-	0.228-
Rural	712,249	99.69	2,905	4.09-	61.2	0.255
New England	1,569,313	96.20	7,097	4.29	54.9	0.240
Metropolitan	1,342,886	95.66	6,164	4.33	53.3	0.237
Rural	226,427	99.53	933	4.05	65.5	0.262
Maine	153,209	99.88	675	4.24	56.7	0.242
Metropolitan	82,345	99.89	368	4.27	43.0	0.187
Rural	70,864	99.87	307	4.21	72.9	0.305
New Hampshire	114,752	98.98	496	4.25	54.4	0.235
Metropolitan	74,135	98.55	330	4.31	39.3	0.174
Rural	40,617	99.77	166	4.13	84.7	0.347
Vermont	62,781	99.82	262	4.00	67.7	0.260
Metropolitan	10,422	99.91	52	4.70	94.9	0.472
Rural	52,359	99.80	210	3.86	60.5	0.220
Massachusetts	709,478	93.75	3,384	4.38	55.8	0.253
Metropolitan	659,025	93.40	3,191	4.42	56.5	0.258
Rural	50,453	98.58	193	3.86	45.7	0.179
Rhode Island	132,332	97.59	596	4.34	57.4	0.261
Metropolitan	132,332	97.59	596	4.34	57.4	0.261
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	1,684	4.19	49.3	0.206
Metropolitan	384,627	97.50	1,627	4.18	49.2	0.206
Rural	12,134	99.66	57	4.53	53.8	0.240
Middle Atlantic	4,707,584	98.68	19,744	4.16-	54.1-	0.227-
Metropolitan	4,221,762	98.55	17,772	4.16-	53.5-	0.225-
Rural	485,822	99.76	1,972	4.11	59.3	0.253
New York	2,143,249	98.98	9,123	4.06-	52.9	0.219-
Metropolitan	1,922,371	98.89	8,186	4.05-	53.1	0.218-
Rural	220,878	99.75	937	4.15	50.5	0.218

See notes at end of table.

Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	3,747	4.18	51.8	0.218-
Metropolitan	916,155	97.84	3,747	4.18	51.8	0.218-
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	6,874	4.27	57.0	0.244
Metropolitan	1,383,236	98.56	5,839	4.31	55.1	0.237
Rural	264,944	99.78	1,035	4.08	67.4	0.284
North Central	6,901,975	96.39	31,793	4.48	62.6	0.282+
Metropolitan	4,398,761	95.22	20,250	4.51	62.7	0.285+
Rural	2,503,214	98.51	11,543	4.42	62.4	0.277
East North Central	4,745,430	97.76	21,078	4.44	61.8	0.278
Metropolitan	3,453,558	97.13	15,153	4.39	61.0	0.270
Rural	1,291,872	99.47	5,925	4.57	64.0	0.296
Ohio	1,263,869	99.46	5,577	4.46	57.6	0.259
Metropolitan	987,528	99.60	4,340	4.46	56.9	0.256
Rural	276,341	98.95	1,237	4.48	59.8	0.269
Indiana	623,062	97.86	3,009	4.81+	72.2+	0.340+
Metropolitan	399,457	97.01	1,903	4.76	79.1+	0.373+
Rural	223,605	99.41	1,106	4.90	60.3	0.285
Illinois	1,265,011	95.90	5,771	4.46	62.2	0.281
Metropolitan	952,934	94.73	4,179	4.33	58.4	0.253
Rural	312,077	99.68	1,592	4.84	71.6	0.359+
Michigan	982,444	96.86	4,053	4.25	64.2	0.279
Metropolitan	744,347	96.06	3,094	4.23	61.4	0.267
Rural	238,097	99.44	959	4.31	72.9	0.320
Wisconsin	611,044	99.60	2,668	4.25	55.4	0.242
Metropolitan	369,292	99.43	1,637	4.27	57.0	0.248
Rural	241,752	99.86	1,031	4.23	53.1	0.234
West North Central	2,156,545	93.50	10,715	4.56	64.1	0.291
Metropolitan	945,203	88.82	5,097	4.92+	67.9	0.337+
Rural	1,211,342	97.51	5,618	4.27	60.8	0.258
Minnesota	397,258	77.30	2,029	4.48	59.1	0.275
Metropolitan	187,915	67.07	1,039	4.60	62.9	0.302
Rural	209,343	89.55	990	4.35	55.5	0.251

See notes at end of table.

Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees			
Iowa									
Metropolitan	404,057	99.37	1,969	4.45	65.3	0.286			
Rural	136,818	98.24	755	5.12	60.8	0.314			
	267,239	99.96	1,214	4.11	68.0	0.273			
Missouri									
Metropolitan	655,875	98.17	3,319	4.80+	69.2	0.335+			
Rural	383,255	96.99	2,084	5.10+	71.1	0.371+			
	272,620	99.88	1,235	4.37	66.1	0.286			
North Dakota									
Metropolitan	85,433	98.28	371	4.19	52.2	0.239			
Rural	22,964	98.14	100	4.02	39.4	0.157			
	62,469	98.34	271	4.25	56.1	0.268			
South Dakota									
Metropolitan	96,216	99.59	420	4.03	59.2	0.240			
Rural	20,427	99.92	85	3.96	85.7	0.320			
	75,789	99.51	335	4.05	53.4	0.220			
Nebraska									
Metropolitan	209,910	98.52	977	4.20	60.8	0.249			
Rural	70,076	95.86	338	4.43	63.5	0.277			
	139,834	99.91	639	4.09	59.4	0.237			
Kansas									
Metropolitan	307,796	95.82	1,630	4.82	65.3	0.293			
Rural	123,748	93.24	696	5.28+	78.4	0.390			
	184,048	97.63	934	4.53	56.0	0.235			
South									
Metropolitan	8,980,101	97.94	39,733	4.53	60.8	0.270			
Rural	5,757,016	96.87	25,604	4.55	61.3	0.277			
	3,223,085	99.91	14,129	4.49	59.9	0.258			
South Atlantic									
Metropolitan	4,668,855	96.31	19,401	4.32	61.5	0.262			
Rural	3,313,125	94.94	13,952	4.34	62.7	0.272			
	1,355,730	99.84	5,449	4.28	58.4	0.238			
Delaware									
Metropolitan	70,251	99.94	299	4.45	63.5	0.290			
Rural	44,355	99.95	206	4.81	65.0	0.337			
	25,896	99.94	93	3.82	59.6	0.209			
Maryland									
Metropolitan	436,606	99.49	1,621	3.82-	59.2	0.228			
Rural	395,091	99.44	1,454	3.79-	58.8	0.226			
	41,515	99.95	167	4.12	62.7	0.243			
District of Col.									
Metropolitan	66,196	99.75	184	2.48-	68.2	0.160			
Rural	55,196	99.75	184	2.48-	68.2	0.160			
	0	0.00	0	0.00	0.0	0.000			

See notes at end of table.



Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	2,268	4.13	67.0	0.277
Metropolitan	355,193	99.87	1,416	4.09	70.6	0.295
Rural	210,942	99.97	852	4.20	60.9	0.246
West Virginia	244,259	98.98	1,150	4.81	57.8	0.260
Metropolitan	90,704	97.39	445	5.01	52.4	0.251
Rural	153,555	99.95	705	4.69	61.2	0.266
North Carolina	689,138	99.93	2,593	3.97-	60.0	0.232
Metropolitan	346,905	99.89	1,282	3.85-	61.5	0.238
Rural	342,233	99.96	1,311	4.09	58.4	0.225
South Carolina	329,020	99.44	1,204	3.96-	62.8	0.227
Metropolitan	186,873	99.05	691	4.02	66.7	0.243
Rural	142,147	99.95	513	3.89	57.6	0.206
Georgia	561,716	99.71	2,667	4.90+	59.5	0.288
Metropolitan	313,319	99.54	1,567	5.15+	62.8	0.323
Rural	248,397	99.93	1,100	4.58	54.8	0.246
Florida	1,705,534	90.97	7,415	4.55	61.7	0.281
Metropolitan	1,514,489	90.04	6,707	4.57	62.2	0.284
Rural	191,045	99.17	708	4.33	57.2	0.243
East South Central	1,726,272	99.80	7,939	4.63	61.7	0.273
Metropolitan	873,594	99.64	4,080	4.71	60.5	0.276
Rural	852,678	99.97	3,859	4.54	62.8	0.270
Kentucky	422,657	99.70	1,996	4.74	58.7	0.275
Metropolitan	183,264	99.37	834	4.50	61.5	0.288
Rural	239,393	99.96	1,162	4.93	56.6	0.265
Tennessee	550,327	99.65	2,709	5.01+	59.3	0.287
Metropolitan	342,007	99.46	1,723	5.06+	57.3	0.279
Rural	208,320	99.96	986	4.91	62.5	0.298
Alabama	463,131	99.97	2,027	4.45	65.0	0.273
Metropolitan	281,960	99.97	1,252	4.54	64.1	0.273
Rural	181,171	99.97	775	4.31	66.4	0.273
Mississippi	290,157	99.98	1,207	4.05	66.7	0.250
Metropolitan	66,363	99.96	271	4.20	61.4	0.248
Rural	223,794	99.98	936	4.00	68.3	0.251

See notes at end of table.

Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central						
Metropolitan	2,584,974	99.74	12,393	4.82+	59.2	0.282
Rural	1,570,297	99.59	7,572	4.89+	59.1	0.286
	1,014,677	99.97	4,821	4.71+	59.4	0.273
Arkansas						
Metropolitan	321,739	99.96	1,556	4.92+	68.0	0.312
Rural	100,966	99.98	501	4.93	73.5	0.344
	220,773	99.95	1,055	4.91	65.4	0.297
Louisiana						
Metropolitan	415,968	99.98	1,793	4.25	58.3	0.227
Rural	268,137	99.98	1,218	4.53	51.5	0.223
	147,831	99.99	575	3.75-	72.9	0.234
Oklahoma						
Metropolitan	378,716	99.02	1,881	4.82	54.5	0.272
Rural	180,038	98.00	890	4.81	64.3	0.316
	198,678	99.96	991	4.84	46.3	0.233
Texas						
Metropolitan	1,468,551	99.81	7,163	4.96+	58.9	0.293
Rural	1,021,156	99.73	4,963	5.00+	58.5	0.293
	447,395	99.97	2,200	4.89+	59.8	0.294
West						
Metropolitan	4,539,951	93.08	20,012	4.52	56.3	0.252
Rural	3,642,859	91.96	16,381	4.54	56.3	0.253
	897,092	97.88	3,631	4.45	56.5	0.248
Mountain						
Metropolitan	1,200,638	94.36	5,495	4.91+	58.4	0.284
Rural	720,893	92.10	3,450	5.07+	58.3	0.298
	479,745	97.98	2,045	4.66	58.5	0.266
Montana						
Metropolitan	97,248	99.90	432	4.63	79.4	0.349
Rural	21,173	99.90	98	4.83	58.5	0.295
	76,075	99.91	334	4.57	86.0	0.363
Idaho						
Metropolitan	109,822	99.77	418	4.08	66.3	0.281
Rural	18,471	99.90	71	4.00	66.0	0.280
	91,351	99.74	347	4.10	66.4	0.280
Wyoming						
Metropolitan	42,408	99.91	208	5.08	55.5	0.280
Rural	12,265	99.93	68	5.76	13.3-	0.084
	30,143	99.89	140	4.81	78.1	0.356
Colorado						
Metropolitan	266,663	94.73	1,381	5.14+	61.9	0.320
Rural	201,737	95.23	1,078	5.27+	63.0	0.343
	64,926	93.22	303	4.71	57.8	0.247

See notes at end of table.

Table 2. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		As percent of all enrollees	Discharges			30-day post-admission deaths		
	Number			Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
New Mexico	125,371		92.49	611	5.17	41.1	0.219		
Metropolitan	51,612		85.86	236	4.78	66.8	0.326		
Rural	73,759		97.76	375	5.45	26.4-	0.149		
Arizona	348,748		91.33	1,570	5.06+	55.6	0.279		
Metropolitan	257,931		89.11	1,226	5.16+	56.8	0.287		
Rural	90,817		98.31	344	4.75	51.6	0.254		
Utah	128,579		99.92	520	4.34	63.6	0.259		
Metropolitan	93,319		99.94	374	4.27	61.0	0.259		
Rural	35,260		99.88	146	4.53	71.3	0.262		
Nevada	81,799		86.15	355	5.43	46.9	0.250		
Metropolitan	64,385		84.73	299	5.81+	45.1	0.259		
Rural	17,414		91.83	56	4.03	56.6	0.216		
Pacific	3,339,313		92.62	14,517	4.39	55.6	0.240		
Metropolitan	2,921,966		91.93	12,931	4.42	55.8	0.242		
Rural	417,347		97.77	1,586	4.20	53.9	0.227		
Washington	461,706		92.41	2,052	4.49	57.1	0.258		
Metropolitan	346,977		90.86	1,580	4.53	57.0	0.259		
Rural	114,729		97.42	472	4.37	57.5	0.256		
Oregon	303,778		86.84	1,246	4.12	55.4	0.229		
Metropolitan	181,677		80.38	795	4.13	51.9	0.216		
Rural	122,101		98.65	451	4.10	61.5	0.252		
California	2,477,248		93.71	10,906	4.42	55.2	0.241		
Metropolitan	2,330,007		93.36	10,342	4.43	55.9	0.243		
Rural	147,241		99.57	564	4.29	42.5	0.183		
Alaska	16,348		99.78	59	4.66	138.5	0.528		
Metropolitan	5,625		99.75	18	4.39	233.0	0.799		
Rural	10,723		99.80	41	4.80	106.2	0.421		
Hawaii	80,233		83.64	254	3.74	40.7	0.132-		
Metropolitan	57,680		83.31	196	4.04	39.4	0.134-		
Rural	22,553		84.47	58	3.00	44.1	0.130		

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
United States	26,698,924	96.70	118,379	4.43	59.1	0.261
Northeast	6,276,897	98.04	26,841	4.19-	54.3-	0.231-
New England	1,569,313	96.20	7,097	4.29	54.9	0.240
Maine	153,209	99.88	675	4.24	56.7	0.242
Bangor, ME	16,035	99.87	67	4.03	68.6	0.359
Lewiston-Auburn, ME	13,464	99.93	70	4.87	13.7-	0.071-
Portland, ME	52,846	99.89	231	4.19	42.5	0.164
New Hampshire	114,752	98.98	496	4.25	54.4	0.235
Manchester, NH	44,397	97.91	202	4.30	35.5	0.153
Portsmouth, NH	29,738	99.52	128	4.33	44.8	0.206
Vermont	62,781	99.82	262	4.00	67.7	0.260
Burlington, VT	10,422	99.91	52	4.70	94.9	0.472
Massachusetts	709,478	93.75	3,384	4.38	55.8	0.253
Boston, MA	429,794	95.67	2,238	4.69	52.2	0.253
New Bedford, MA	65,540	98.67	214	3.20-	100.1	0.355
Pittsfield, MA	20,281	91.00	74	3.43	61.6	0.233
Springfield, MA	72,225	92.57	340	4.43	62.3	0.279
Worcester, MA	71,185	79.42	325	4.07	47.9	0.190
Rhode Island	132,332	97.59	596	4.34	57.4	0.261
Providence, RI	132,332	97.59	596	4.34	57.4	0.261
Connecticut	396,761	97.56	1,684	4.19	49.3	0.206-
Bridgeport, CT	96,911	96.63	455	4.60	54.8	0.247
Hartford, CT	157,139	99.16	607	3.84	40.0	0.153-
New Haven, CT	102,964	95.31	426	4.05	47.6	0.192
New London, CT	27,613	99.70	139	5.13	74.3	0.411

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	19,744	4.16-	54.1-	0.227-
New York	2,143,249	98.98	9,123	4.06-	52.9	0.219-
Albany, NY	115,122	98.78	484	4.07	60.6	0.246
Binghamton, NY	35,576	99.96	144	3.95	32.2	0.138
Buffalo, NY	134,451	98.66	571	4.32	54.8	0.235
Elmira, NY	13,699	99.94	34	2.41-	0.0	0.000
Glens Falls, NY	15,222	99.63	54	3.46	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	1,208	4.14	67.4	0.289
New York, NY	997,473	99.58	4,421	4.05-	51.5	0.214-
Niagara Falls, NY	30,841	99.69	135	4.69	51.4	0.247
Orange County, NY	30,488	99.89	120	3.91	26.1	0.098-
Poughkeepsie, NY	27,864	98.47	116	4.00	34.8	0.136
Rochester, NY	102,542	98.80	408	3.70-	38.9	0.136-
Syracuse, NY	75,217	99.92	295	3.90	49.4	0.188
Utica-Rome, NY	46,733	99.90	196	4.16	79.1	0.341
New Jersey	916,155	97.84	3,747	4.18	51.8	0.218-
Atlantic City, NJ	46,406	97.93	209	4.42	55.1	0.249
Bergen-Passaic, NJ	171,246	99.45	678	4.03	58.1	0.234
Jersey City, NJ	64,069	99.25	263	4.16	43.2	0.162
Middlesex, NJ	91,009	94.70	387	4.64	53.8	0.264
Monmouth-Ocean, NJ	154,643	99.57	638	4.33	54.4	0.233
Newark, NJ	211,511	99.40	852	3.97	48.0	0.193
Trenton, NJ	38,499	97.14	136	3.60	36.8	0.135
Vineland, NJ	16,382	96.17	51	3.28	17.5	0.066-
Pennsylvania	1,648,180	98.75	6,874	4.27	57.0	0.244
Allentown, PA-NJ	94,668	99.09	401	4.45	50.4	0.228
Altoona, PA	20,692	99.99	98	4.66	86.5	0.429
Beaver County, PA	27,562	99.95	106	4.36	72.0	0.252
Erie, PA	35,244	99.92	158	4.78	71.8	0.307
Harrisburg, PA	72,929	99.95	274	3.81	65.0	0.228
Johnstown, PA	40,260	99.97	163	4.39	47.8	0.191
Lancaster, PA	48,045	99.93	213	4.26	50.4	0.234
Philadelphia PA-NJ	569,054	95.81	2,688	4.67	50.3	0.236
Pittsburgh, PA	323,494	99.06	1,262	4.13	63.9	0.254
Reading, PA	48,476	99.88	166	3.47	34.9	0.125-
Scranton, PA	122,888	99.95	423	3.61-	46.3	0.172
Snaron, PA	19,009	99.97	80	4.42	49.6	0.278
State College, PA	10,032	99.97	48	4.95	43.9	0.207
Williamsport, PA	16,877	99.98	85	4.96	72.7	0.291
York, PA	48,541	99.96	187	3.95	69.2	0.316

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	31,793	4.48	62.6	0.282+
East North Central	4,745,430	97.76	21,078	4.44	61.8	0.278
Ohio	1,263,869	99.46	5,577	4.46	57.6	0.259
Akron, OH	75,615	99.90	332	4.47	47.8	0.217
Canton, OH	51,895	99.97	204	4.09	59.5	0.260
Cincinnati, OH-KY-IN	159,407	99.96	738	4.48	59.5	0.255
Cleveland, OH	242,585	99.71	1,018	4.32	49.6	0.218
Columbus, OH	121,377	99.73	609	4.95	63.8	0.326
Dayton, OH	103,547	99.95	481	4.75	65.3	0.312
Hamilton, OH	26,009	99.95	131	5.04	51.1	0.235
Lima, OH	19,579	99.97	80	4.02	55.7	0.201
Lorain-Elyria, OH	27,340	99.85	107	4.26	36.1	0.164
Mansfield, OH	15,230	99.96	61	4.17	49.0	0.212
Steubenville, OH-WV	21,934	98.57	92	4.65	80.9	0.359
Toledo, OH	70,660	99.95	284	3.98	45.9	0.186
Youngstown, OH	69,319	99.95	243	3.83	60.1	0.239
Indiana	623,062	97.86	3,009	4.81+	72.2+	0.340+
Anderson, IN	17,198	99.83	87	5.24	87.2	0.500
Bloomington, IN	7,913	99.87	41	5.13	70.4	0.380
Elkhart-Goshen, IN	15,647	99.92	79	4.94	56.6	0.308
Evansville, IN-KY	34,434	95.72	165	4.63	81.1	0.397
Fort Wayne, IN	37,565	97.77	179	4.62	58.8	0.285
Gary-Hammond, IN	61,160	97.01	139	2.56-	67.0	0.170
Indianapolis, IN	118,407	93.81	753	6.16+	84.3	0.497+
Kokomo, IN	10,842	99.94	58	5.43	60.8	0.286
Lafayette, IN	11,228	99.92	41	3.48	75.6	0.252
Muncie, IN	13,759	99.91	75	5.48	80.7	0.382
South Bend, IN	33,170	99.93	127	3.80	129.5	0.457
Terre Haute, IN	19,585	99.89	100	4.85	74.4	0.403
Illinois	1,265,011	95.90	5,771	4.46	62.2	0.281
Aurora-Elgin, IL	30,946	98.68	127	3.92	41.6	0.156
Bloomington, IL	12,672	99.94	65	4.71	102.3	0.434
Champaign, IL	13,391	99.91	67	4.79	54.6	0.291
Chicago, IL	608,135	92.94	2,515	4.10-	60.0	0.243
Decatur, IL	15,992	99.97	93	5.49	0.0	0.000
Joliet, IL	28,047	97.18	136	4.96	64.9	0.300
Kankakee, IL	12,020	99.94	45	3.78	24.3	0.084
Lake County, IL	36,099	96.52	187	5.32	45.5	0.264
Peoria, IL	43,549	99.93	221	4.96	91.4	0.499
Rockford, IL	28,351	88.93	117	4.03	64.7	0.276
Springfield, IL	24,799	99.96	137	5.19	48.8	0.276

See notes at end of table.



Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	4,053	4.25	64.2	0.279
Ann Arbor, MI	17,760	95.12	98	5.23	50.4	0.270
Battle Creek, MI	16,831	99.89	71	4.17	94.9	0.413
Benton Harbor, MI	21,618	99.88	88	4.18	87.3	0.333
Detroit, MI	448,826	96.43	1,820	4.20	62.2	0.270
Flint, MI	43,084	91.01	167	3.90	54.0	0.216
Grand Rapids, MI	64,091	95.42	331	4.97	59.3	0.282
Jackson, MI	17,046	99.82	80	4.74	53.3	0.241
Kalamazoo, MI	21,512	99.85	74	3.33	26.0	0.093-
Lansing, MI	32,460	90.23	138	4.07	79.1	0.327
Muskegon, MI	18,957	98.06	88	4.88	55.0	0.282
Saginaw, MI	42,162	96.18	139	3.43	51.7	0.203
Wisconsin	611,044	99.60	2,668	4.25	55.4	0.242
Appleton, WI	34,483	99.96	146	4.15	41.2	0.167
Eau Claire, WI	16,955	99.94	70	4.01	82.5	0.273
Green Bay, WI	19,185	99.97	65	3.36	77.8	0.312
Janesville, WI	16,529	99.85	70	4.02	25.4	0.114
Kenosha, WI	14,291	99.91	56	3.94	42.2	0.209
LaCrosse, WI	11,858	99.91	85	6.59	85.4	0.540
Madison, WI	30,776	99.74	175	5.32	35.8	0.181
Milwaukee, WI	166,813	99.21	722	4.14	67.8	0.288
Racine, WI	20,503	99.90	87	4.16	29.6	0.142
Sheboygan, WI	14,461	99.98	64	4.30	29.5	0.132
Wausau, WI	12,945	99.95	51	3.98	60.8	0.225
West North Central	2,156,545	93.50	10,715	4.56	64.1	0.291
Minnesota	397,258	77.30	2,029	4.48	59.1	0.275
Duluth, MN-WI	29,977	76.74	129	4.05	75.2	0.314
Minneapolis, MN-WI	141,769	64.45	824	4.74	60.1	0.301
Rochester, MN	9,393	99.67	50	4.59	60.3	0.280
St. Cloud, MN	12,248	70.92	63	4.36	47.3	0.193
Iowa	404,057	99.37	1,969	4.45	65.3	0.286
Cedar Rapids, IA	19,323	99.94	103	5.00	64.5	0.339
Davenport, IA-IL	44,646	99.94	224	4.92	42.5	0.220
Des Moines, IA	40,067	94.50	237	5.38	77.2	0.396
Dubuque, IA	11,460	99.95	84	6.67	113.8	0.660
Iowa City, IA	6,240	99.90	30	4.34	83.0	0.444
Sioux City, IA-NE	15,951	99.96	105	5.93	33.3	0.220
Waterloo, IA	19,521	99.96	75	3.69	38.9	0.145

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Missouri	655,875	98.17	3,319	4.80+	69.2	0.335+
Columbia, MO	8,560	99.98	43	4.73	86.9	0.328
Joplin, MO	19,275	99.95	96	4.93	122.2	0.684
Kansas City, MO-KS	154,919	95.72	867	5.25+	78.0	0.403+
St. Joseph, MO	13,630	99.97	80	5.42	123.0	0.677
St. Louis, MO-IL	283,167	97.43	1,487	5.00+	59.8	0.300
Springfield, MO	27,676	99.94	143	4.95	44.6	0.244
North Dakota	85,433	98.28	371	4.19	52.2	0.239
Bismarck, ND	8,160	95.13	32	3.75	34.0	0.117
Fargo, ND-MN	14,138	96.57	58	3.67	101.6	0.357
Grand Forks, ND	5,687	99.95	29	4.64	0.0	0.000
South Dakota	96,216	99.59	420	4.03	59.2	0.240
Rapid City, SD	7,152	99.89	31	4.44	115.1	0.425
Sioux Falls, SD	13,275	99.93	54	3.73	71.9	0.270
Nebraska	209,910	98.52	977	4.20	60.8	0.249
Lincoln, NE	20,994	98.50	106	4.51	69.8	0.340
Omaha, NE-IA	57,609	95.39	267	4.32	55.9	0.229
Kansas	307,796	95.82	1,630	4.82	65.3	0.293
Lawrence, KS	4,965	87.78	21	3.73	0.0	0.000
Topeka, KS	18,983	97.26	121	5.64	61.6	0.367
Wichita, KS	45,844	88.57	253	5.13	95.5	0.472
South	8,980,101	97.94	39,733	4.53	60.8	0.270
South Atlantic	4,668,855	96.31	19,401	4.32	61.5	0.262
Delaware	70,251	99.94	299	4.45	63.5	0.290
Wilmington, DE-NJ-MD	58,114	99.65	247	4.46	74.6	0.350
Maryland	436,606	99.49	1,621	3.82-	59.2	0.228
Baltimore, MD	244,878	99.90	849	3.57-	64.0	0.239
Cumberland, MD-WV	17,051	99.95	50	3.02	43.4	0.124
Hagerstown, MD	14,522	99.95	71	4.97	28.4	0.140
District of Col.	66,196	99.75	184	2.48-	68.2	0.160
Washington, DC-MD-VA	261,121	99.05	948	3.61-	66.3	0.231

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	2,268	4.13	67.0	0.277
Charlottesville, VA	12,020	99.92	59	4.88	60.6	0.331
Danville, VA	15,532	99.99	61	4.12	53.6	0.206
Lynchburg, VA	18,110	99.99	57	3.13	19.5	0.056-
Norfolk, VA	102,601	99.96	391	4.06	79.5	0.339
Richmond, VA	85,698	99.98	371	4.34	64.3	0.284
Roanoke, VA	30,622	99.98	141	4.34	40.3	0.185
West Virginia	244,259	98.98	1,150	4.81	57.8	0.260
Charleston, WV	34,215	99.96	158	4.84	69.4	0.345
Huntington, WV-KY-OH	40,891	99.95	204	5.06	36.8	0.170
Parkersburg, WV-OH	19,888	99.94	131	6.42	62.3	0.387
Wheeling, WV-OH	22,016	82.51	112	4.98	73.6	0.317
North Carolina	689,138	99.93	2,593	3.97-	60.0	0.232
Asheville, NC	24,469	99.92	88	3.48	107.2	0.355
Burlington, NC	14,505	99.99	51	3.81	0.0	0.000
Charlotte, NC	109,337	99.79	457	4.42	58.1	0.259
Fayetteville, NC	13,388	99.98	38	3.20	68.7	0.277
Greensboro, NC	99,387	99.97	323	3.36-	45.9	0.153-
Hickory, NC	23,392	99.97	99	4.64	108.0	0.500
Jacksonville, NC	5,134	99.86	16	3.67	75.4	0.252
Raleigh-Durham, NC	56,484	99.86	232	4.14	71.6	0.263
Wilmington, NC	12,634	99.97	33	2.79	44.2	0.183
South Carolina	329,020	99.44	1,204	3.96-	62.8	0.227
Anderson, SC	16,583	99.70	86	5.62	63.8	0.350
Charleston, SC	34,246	98.90	130	4.16	47.8	0.171
Columbia, SC	35,361	99.98	102	3.09-	47.4	0.129
Florence, SC	11,195	99.96	32	3.13	124.9	0.314
Greenville, SC	65,893	98.01	228	3.72	57.3	0.210
Georgia	561,716	99.71	2,667	4.90+	59.5	0.288
Albany, GA	9,292	99.92	48	5.35	61.7	0.360
Athens, GA	13,510	99.96	72	5.36	30.3	0.157
Atlanta, GA	189,539	99.27	982	5.29+	55.9	0.298
Augusta, GA-SC	32,938	99.93	153	4.96	108.2	0.483
Columbus, GA-AL	22,847	99.96	104	4.85	47.6	0.203
Macon, GA	25,929	99.97	123	4.92	59.3	0.305
Savannah, GA	25,338	99.94	97	4.03	134.2	0.484

See notes at end of table.



Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	7,415	4.55	61.7	0.281
Bradenton, FL	42,906	99.68	197	4.63	80.2	0.333
Daytona Beach, FL	62,616	92.90	329	5.43	71.7	0.368
Fort Lauderdale, FL	181,839	81.09	825	4.52	52.1	0.238
Fort Myers, FL	61,428	99.65	205	4.01	13.3-	0.056-
Fort Pierce, FL	41,198	99.28	117	3.46	89.0	0.319
FT. Walton Beach, FL	10,169	99.88	48	5.68	109.3	0.747
Gainesville, FL	16,758	99.58	83	5.24	82.0	0.438
Jacksonville, FL	80,895	98.22	392	5.03	65.9	0.344
Lakeland, FL	55,495	99.56	219	4.34	56.2	0.235
Melbourne, FL	46,501	99.72	218	5.66	47.4	0.263
Miami-Hialeah, FL	168,502	79.57	873	4.56	52.1	0.233
Naples, FL	23,433	99.75	68	3.66	72.2	0.262
Ocala, FL	31,367	99.50	100	4.03	65.0	0.279
Orlando, FL	90,604	98.55	426	4.97	77.3	0.375
Panama City, FL	11,817	99.70	34	3.35	96.5	0.304
Pensacola, FL	29,972	99.89	148	5.44	46.5	0.265
Sarasota, FL	77,895	99.81	287	3.94	58.6	0.246
Tallahassee, FL	17,414	97.85	74	4.33	72.1	0.357
Tampa, FL	323,951	87.05	1,505	4.61	65.4	0.306
West Palm Beach, FL	139,729	85.22	559	4.24	75.5	0.307
East South Central	1,726,272	99.80	7,939	4.63	61.7	0.273
Kentucky	422,657	99.70	1,996	4.74	58.7	0.275
Lexington, KY	31,008	98.87	158	4.95	51.0	0.251
Louisville, KY-IN	107,485	99.20	442	4.07	71.2	0.317
Owensboro, KY	10,319	99.96	48	4.74	20.1	0.101
Tennessee	550,327	99.65	2,709	5.01+	59.3	0.287
Chattanooga, TN-GA	50,061	99.97	269	5.45	73.4	0.399
Clarksville, TN-KY	12,541	99.91	71	5.67	52.3	0.311
Jackson, TN	10,064	99.95	42	3.86	47.1	0.185
Johnson City, TN-VA	55,068	99.97	250	4.77	82.3	0.350
Knoxville, TN	70,970	99.96	385	5.64+	58.9	0.347
Memphis, TN-AR-MS	88,836	98.06	406	4.48	76.8	0.324
Nashville, TN	92,994	99.96	480	5.15	32.9-	0.164

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Alabama	463,131	99.97	2,027	4.45	65.0	0.273
Anniston, AL	13,124	99.97	49	4.04	68.3	0.262
Birmingham, AL	108,546	99.98	471	4.30	72.2	0.281
Dothan, AL	12,690	99.94	55	4.47	36.4	0.167
Florence, AL	16,687	99.97	72	4.55	53.6	0.257
Gadsden, AL	14,295	99.97	70	5.35	33.3	0.163
Huntsville, AL	17,137	99.96	87	5.44	72.7	0.396
Mobile, AL	50,513	99.96	234	4.92	36.7	0.174
Montgomery, AL	29,832	99.97	127	4.18	89.1	0.341
Tuscaloosa, AL	13,604	99.99	66	4.78	138.8	0.576
Mississippi	290,157	99.98	1,207	4.05	66.7	0.250
Biloxi-Gulfport, MS	18,079	99.97	80	4.86	66.9	0.307
Jackson, MS	35,305	99.98	132	3.60	62.3	0.216
Pascagoula, MS	8,556	99.88	40	5.47	26.3	0.141
West South Central	2,584,974	99.74	12,393	4.82+	59.2	0.282
Arkansas	321,739	99.96	1,556	4.92+	68.0	0.312
Fayetteville, AR	11,803	99.95	61	5.21	112.2	0.498
Fort Smith, AR-OK	21,413	99.98	105	4.95	59.1	0.288
Little Rock, AR	50,966	99.99	263	5.15	70.4	0.318
Pine Bluff, AR	11,012	99.98	44	3.78	53.9	0.244
Louisiana	415,968	99.98	1,793	4.25	58.3	0.227
Alexandria, LA	13,819	99.96	62	4.29	42.6	0.135
Baton Rouge, LA	39,583	99.97	172	4.50	45.2	0.213
Houma-Thibodaux, LA	13,501	100.00	53	4.35	73.2	0.256
Lafayette, LA	14,620	99.99	72	4.96	28.4	0.141
Lake Charles, LA	16,436	99.98	63	4.18	43.3	0.204
Monroe, LA	14,648	99.99	68	4.39	64.4	0.252
New Orleans, LA	118,708	99.98	533	4.47	65.5	0.277
Shreveport, LA	36,822	99.98	195	4.94	26.2-	0.123
Oklahoma	378,716	99.02	1,891	4.82	54.5	0.272
Enid, OK	8,215	99.94	41	4.64	74.8	0.443
Lawton, OK	8,221	99.99	28	3.64	35.2	0.131
Oklahoma City, OK	88,646	97.45	431	4.67	66.1	0.316
Tulsa, OK	71,032	98.13	371	5.12	66.1	0.336

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Texas	1,468,551	99.81	7,163	4.96+	58.9	0.293
Abilene, TX	13,100	99.96	87	6.39	53.4	0.435
Amarillo, TX	19,063	99.97	111	6.03	27.7	0.169
Austin, TX	47,578	99.95	272	5.63	31.9	0.188
Beaumont, TX	42,323	99.98	183	4.52	78.5	0.351
Brazoria, TX	12,486	99.78	56	5.13	74.2	0.376
Brownsville, TX	20,169	99.86	73	4.05	36.7	0.154
Bryan, TX	6,955	99.96	48	6.73	106.3	0.690
Corpus Christi, TX	28,417	95.56	144	5.46	54.0	0.304
Dallas, TX	172,118	99.95	844	4.90	55.0	0.272
El Paso, TX	37,292	99.94	151	4.44	52.8	0.259
Fort Worth, TX	97,947	99.96	491	5.08	65.4	0.322
Galveston, TX	19,376	99.94	86	4.84	61.0	0.287
Houston, TX	187,992	99.85	907	5.08	61.1	0.296
Killeen-Temple, TX	17,182	99.97	97	5.63	82.2	0.463
Laredo, TX	8,421	99.99	30	3.54	23.6	0.108
Longview, TX	20,547	99.98	94	4.45	66.0	0.284
Lubbock, TX	18,957	99.97	92	5.08	63.3	0.337
McAllen, TX	27,402	99.82	95	3.99	66.1	0.272
Midland, TX	7,362	99.96	37	5.39	0.0	0.000
Odessa, TX	9,207	99.99	40	5.03	50.4	0.266
San Angelo, TX	11,213	99.99	52	4.65	90.7	0.358
San Antonio, TX	107,989	99.28	502	4.72	55.8	0.282
Sherman-Denison, TX	14,532	99.99	89	5.96	43.4	0.269
Texas, TX-AR	15,315	99.99	95	6.10	89.8	0.562
Tyler, TX	18,223	99.98	101	5.72	83.2	0.405
Victoria, TX	6,871	99.97	25	3.95	34.3	0.154
Waco, TX	23,624	99.99	99	4.05	58.8	0.245
Wichita Falls, TX	14,462	99.97	95	6.22	88.6	0.465
West	4,539,951	93.08	20,012	4.52	56.3	0.252
Mountain	1,200,638	94.36	5,495	4.91+	58.4	0.284
Montana	97,248	99.90	432	4.63	79.4	0.349
Billings, MT	12,097	99.88	58	5.02	61.1	0.261
Great Falls, MT	9,076	99.91	40	4.58	56.1	0.337
Idaho	109,822	99.77	418	4.08	66.3	0.281
Boise City, ID	18,471	99.90	71	4.00	66.0	0.280
Wyoming	42,408	99.91	208	5.08	55.5	0.280
Casper, WY	5,379	99.91	27	5.20	0.0	0.000
Cheyenne, WY	6,886	99.96	41	6.20	22.4	0.150

See notes at end of table.



Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees		
Colorado	266,663	94.73	1,381	5.14+	61.9	0.320	0.320		
Boulder-Longmont, CO	15,143	97.96	86	5.28	97.2	0.489	0.489		
Colorado Springs, CO	24,899	95.03	138	5.75	64.1	0.387	0.387		
Denver, CO	119,624	94.10	662	5.40+	62.4	0.347	0.347		
Fort Collins, CO	15,089	99.71	78	5.16	69.8	0.387	0.387		
Greeley, CO	11,610	99.62	54	4.72	28.2	0.166	0.166		
Pueblo, CO	15,372	94.43	60	4.01	50.6	0.195	0.195		
New Mexico	125,371	92.49	611	5.17	41.1	0.219	0.219		
Albuquerque, NM	33,783	81.01	154	4.69	70.6	0.343	0.343		
Las Cruces, NM	9,375	99.94	40	4.72	62.5	0.343	0.343		
Santa Fe, NM	8,454	93.66	42	5.20	56.0	0.241	0.241		
Arizona	348,748	91.33	1,570	5.06+	55.6	0.279	0.279		
Phoenix, AZ	187,381	86.74	901	5.23+	58.0	0.293	0.293		
Tucson, AZ	70,550	96.06	325	4.97	53.5	0.272	0.272		
Utah	128,579	99.92	520	4.34	63.6	0.259	0.259		
Provo-Orem, UT	16,076	99.93	68	4.69	81.3	0.334	0.334		
Salt Lake City, UT	77,243	99.94	306	4.18	57.0	0.245	0.245		
Nevada	81,799	86.15	355	5.43	46.9	0.250	0.250		
Las Vegas, NV	45,252	82.98	212	6.02	38.7	0.236	0.236		
Reno, NV	19,133	89.17	87	5.35	61.5	0.307	0.307		
Pacific	3,339,313	92.62	14,517	4.39	55.6	0.240	0.240		
Washington	461,706	92.41	2,052	4.49	57.1	0.258	0.258		
Bellingham, WA	13,629	99.51	57	4.11	29.7	0.138	0.138		
Bremerton, WA	15,439	96.59	69	4.62	36.9	0.197	0.197		
Olympia, WA	14,254	90.98	68	4.76	61.6	0.277	0.277		
Richland, WA	12,559	99.85	40	3.70	61.7	0.188	0.188		
Seattle, WA	159,828	86.57	769	4.68	57.9	0.269	0.269		
Spokane, WA	41,237	94.51	203	4.72	54.6	0.251	0.251		
Tacoma, WA	50,245	97.24	206	4.19	75.6	0.325	0.325		
Vancouver, WA	17,048	80.32	76	4.62	13.3-	0.059-	0.059-		
Yakima, WA	22,738	99.74	92	4.14	78.8	0.344	0.344		
Oregon	303,778	86.84	1,246	4.12	55.4	0.229	0.229		
Eugene, OR	28,947	88.67	100	3.57	57.4	0.210	0.210		
Medford, OR	20,326	99.78	67	3.53	71.8	0.254	0.254		
Portland, OR	99,155	72.79	483	4.37	47.5	0.208	0.208		
Salem, OR	33,249	90.39	145	4.17	52.7	0.220	0.220		

See notes at end of table.

Table 3. Reduction of fracture of the femur: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	10,906	4.42	55.2	0.241
Anaheim-Santa Ana, CA	167,171	89.39	733	4.17	38.9-	0.156-
Bakersfield, CA	44,969	99.76	160	4.02	70.9	0.270
Chico, CA	27,102	99.09	107	4.29	39.2	0.194
Fresno, CA	58,425	99.90	258	4.48	43.4	0.182
Los Angeles, CA	677,939	91.40	3,031	4.29	51.6	0.218-
Merced, CA	13,462	99.86	63	5.17	73.2	0.401
Modesto, CA	33,619	98.80	144	4.52	37.2	0.154
Oakland, CA	188,258	99.08	831	4.41	68.2	0.297
Oxnard-Ventura, CA	49,488	93.74	229	4.79	60.7	0.292
Redding, CA	17,796	99.73	59	3.86	48.8	0.195
Riverside, CA	203,246	90.92	968	5.04	52.1	0.276
Sacramento, CA	120,273	91.81	529	4.67	35.2-	0.167-
Salinas, CA	29,131	99.86	103	3.63	76.1	0.310
San Diego, CA	205,402	91.35	979	4.90	72.5	0.332
San Francisco, CA	163,753	89.02	698	3.98	70.9	0.279
San Jose, CA	105,258	99.50	447	4.26	69.2	0.297
Santa Barbara, CA	38,021	99.70	174	4.43	58.2	0.247
Santa Cruz, CA	24,640	99.77	97	3.71	46.8	0.146
Santa Rosa, CA	44,775	99.49	217	4.89	55.1	0.264
Stockton, CA	40,855	91.54	198	5.05	68.1	0.308
Vallejo, CA	35,778	98.59	149	4.32	69.5	0.276
Visalia, CA	28,811	99.91	108	3.99	10.1-	0.034-
Yuba City, CA	11,835	99.35	60	5.69	61.0	0.370
Alaska	16,348	99.78	59	4.66	138.5	0.528
Anchorage, AK	5,625	99.75	18	4.39	233.0	0.799
Hawaii	80,233	83.64	254	3.74	40.7	0.132-
Honolulu, HI	57,680	83.31	196	4.04	39.4	0.134-

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Other arthroplasty of the hip

In 1986, there were 187,739 hospitalizations for fracture of the neck of the femur among the Medicare aged. A common method of treating such fractures was other arthroplasty of the hip (i.e., arthroplasty, excluding total hip replacement). The other major treatment for hip fractures is open or closed reduction.

Other arthroplasty of the hip most frequently involves replacement of the head of the femur with a prosthesis; it can also consist of replacement of the acetabulum or other repair of the hip. In 1986, there were 59,773 other arthroplasties of the hip performed on the aged Medicare population, for a rate of 2.24 discharges per 1,000 enrollees. Mortality was relatively high following this procedure, with 55.3 deaths per 1,000 discharges within 30 days of admission, or 0.123 deaths per 1,000 enrollees.

## Age and sex patterns

Women underwent other arthroplasty of the hip more than twice as often as men, with the exception of those 85 years of age or over, where the difference was a little less marked. The number of discharges per 1,000 enrollees increased rapidly with age for both men and women. Among men, discharges per 1,000 increased by a factor of nearly 10, from 0.50 for those aged 65–74 years to 4.83 for those 85 years of age or over. Among

NOTE: Other arthroplasty of the hip is ICD-9-CM code 81.6.

women, discharges increased by a factor of nearly 7, from 1.20 discharges per 1,000 enrollees aged 65–74 years to 8.27 for those 85 years of age or over.

Although women underwent this procedure more often than men, the number of deaths within 30 days of admission per 1,000 discharges was substantially higher for men. Among enrollees 85 years of age or over, the death rate for men (152.8 deaths per 1,000) was more than twice that for women (68.9 deaths per 1,000). Deaths increased with age for both men and women. For example, there were 25.5 deaths per 1,000 discharges among women aged 65–74 years and 68.9 among those 85 years of age or over. Among men, the death rate rose from 46.8 to 152.8 from the youngest to the oldest age group.

## Patterns by race

As with the other orthopedic procedures included in this volume, other arthroplasty of the hip was performed substantially more frequently on white enrollees than on black enrollees for all age and sex groups. For example, among women 85 years of age or over there were 8.70 discharges per 1,000 enrollees for white women and only 3.63 per 1,000 for black women. Among men in that age group, the rates were 5.09 and 2.69 for white men and black men, respectively. There was no consistent pattern by race for 30-day post-admission deaths per 1,000 discharges.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic areas. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 were derived from the data in these tables.

## Discharge rates

In general, the distribution of hospital discharges for other arthroplasty of the hip was very similar to the distribution for reduction of fracture of the femur and fracture of the neck of the femur. The highest discharge rates for other arthroplasty of the hip were in the South Central and Midwestern areas of the United States. The State with the highest discharge rate was Montana, with 2.97 discharges per 1,000 enrollees. Most States with low discharge rates were in the Northeast, although Florida, Michigan, and some Western States also had relatively low discharge rates (Figure 1). The lowest rate was recorded in Rhode Island (1.45 discharges per 1,000). The boxplots (Figure 2) indicate that the highest median division rate was in the West North Central Division, and the lowest was in the Middle Atlantic Division.



Nationwide, the number of discharges per 1,000 enrollees was higher in rural areas than in metropolitan areas, although this pattern did not hold in all census divisions. There was no strong pattern with respect to urban-rural differences in 30-day post-admission mortality rates.

Table 1. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

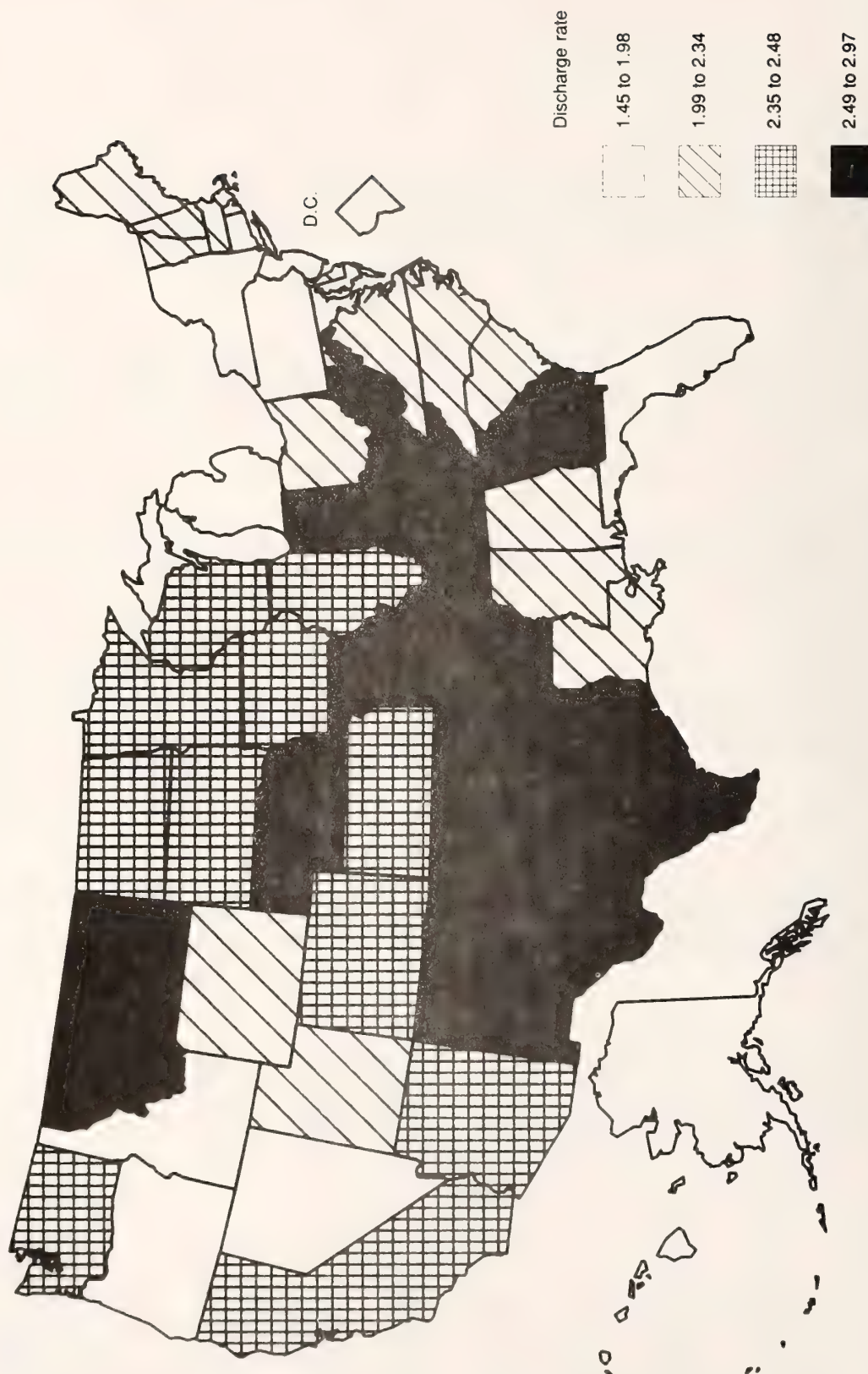
Age, sex, and race	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
All persons (1)	26,698,924	96.70	59,773	2.24	55.3	0.123
65-74 years	16,162,594	96.33	14,429	0.89	30.7	0.027
75-84 years	8,020,447	96.96	26,884	3.35	48.9	0.163
85 years or over	2,515,883	98.32	18,460	7.34	83.9	0.615
Men	10,650,991	96.01	12,181	1.14	96.9	0.110
65-74 years	7,056,445	95.90	3,522	0.50	46.8	0.023
75-84 years	2,912,366	96.02	5,367	1.84	95.4	0.175
85 years or over	682,180	97.22	3,292	4.83	152.8	0.737
Women	16,047,933	97.16	47,592	2.97	44.7	0.132
65-74 years	9,106,149	96.66	10,907	1.20	25.5	0.030
75-84 years	5,108,081	97.51	21,517	4.21	37.3	0.157
85 years or over	1,833,703	98.74	15,168	8.27	58.9	0.569
White	23,574,066	96.62	55,749	2.36	55.3	0.130
65-74 years	14,207,064	96.23	13,323	0.94	31.3	0.029
75-84 years	7,134,499	96.88	25,163	3.53	48.5	0.171
85 years or over	2,232,503	98.26	17,263	7.73	83.9	0.648
Men	9,391,016	95.94	11,219	1.19	97.0	0.115
65-74 years	6,216,472	95.83	3,217	0.52	49.4	0.025
75-84 years	2,573,989	95.94	4,944	1.92	93.6	0.179
85 years or over	600,555	97.12	3,058	5.09	152.4	0.775
Women	14,183,050	97.07	44,530	3.14	44.8	0.140
65-74 years	7,990,592	96.55	10,106	1.26	25.5	0.032
75-84 years	4,560,510	97.42	20,219	4.43	37.4	0.165
85 years or over	1,631,948	98.69	14,205	8.70	59.1	0.601
Black	1,991,943	97.86	2,101	1.05	64.7	0.068
65-74 years	1,213,014	97.54	559	0.46	30.4	0.014
75-84 years	583,429	98.11	887	1.52	68.8	0.104
85 years or over	195,500	99.11	655	3.35	88.5	0.296
Men	792,788	97.49	595	0.75	109.2	0.081
65-74 years	519,305	97.28	187	0.36	26.7	0.009
75-84 years	215,401	97.67	252	1.17	131.0	0.153
85 years or over	58,082	98.74	156	2.69	173.1	0.464
Women	1,199,155	98.10	1,506	1.26	47.1	0.059
65-74 years	693,709	97.74	372	0.54	32.3	0.017
75-84 years	368,028	98.37	635	1.73	44.1	0.076
85 years or over	137,418	99.26	499	3.63	62.1	0.225

(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

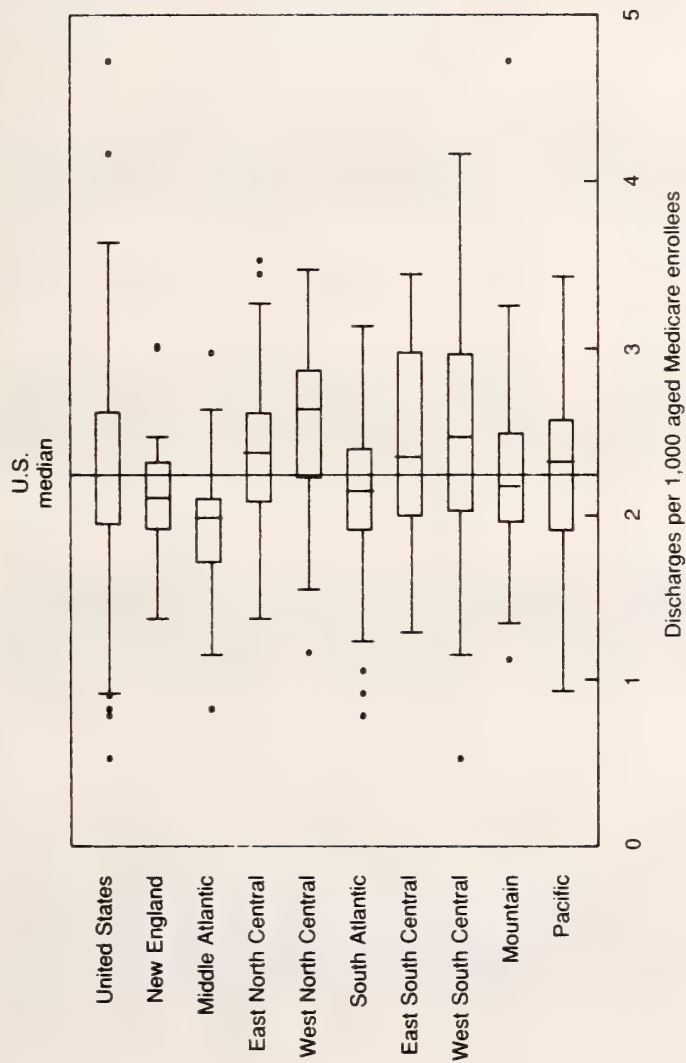
Figure 1. Other arthroplasty of the hip: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.



**Figure 2. Other arthroplasty of the hip: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986**



Outliers for discharges per 1,000 enrollees		
Area	Rural or metropolitan statistical area	Rate
United States	Pine Bluff, AR	0.52
	Naples, FL	0.79
	Niagara Falls, NY	0.83
	Fort Myers, FL	0.92
	Monroe, LA	4.16
New England	Greeley, CO	4.72
	Lewiston-Auburn, ME	3.00
	Rural counties, CT	3.04
Middle Atlantic	Niagara Falls, NY	0.83
	Binghamton, NY	2.97
East North Central	Joliet, IL	3.45
	Champaign, IL	3.52
West North Central	Bismarck, ND	1.17
South Atlantic	Naples, FL	0.79
	Fort Myers, FL	0.92
	Hagerstown, MD	1.05
West South Central	Pine Bluff, AR	0.52
Mountain	Las Vegas, NV	1.12
	Greeley, CO	4.72

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000	Per 1,000 discharges	Per 1,000	Per 1,000 non-HMD enrollees	
				non-HMD enrollees		non-HMD enrollees		
United States	26,698,924	96.70	59,773	2.24	55.3	0.123		
Metropolitan	19,363,284	95.80	42,290	2.18-	54.4	0.119		
Rural	7,335,640	99.16	17,483	2.40+	57.5	0.135		
Northeast	6,276,897	98.04	12,041	1.88-	50.1	0.095-		
Metropolitan	5,564,648	97.84	10,533	1.85-	49.0-	0.092-		
Rural	712,249	99.69	1,508	2.13	57.6	0.119		
New England	1,569,313	96.20	3,326	2.02-	48.0	0.099-		
Metropolitan	1,342,886	95.66	2,820	1.99-	45.4	0.094-		
Rural	226,427	99.53	506	2.20	63.0	0.132		
Maine	153,209	99.88	340	2.15	54.0	0.105		
Metropolitan	82,345	99.89	199	2.32	52.6	0.117		
Rural	70,864	99.87	141	1.94	56.1	0.093		
New Hampshire	114,752	98.98	254	2.18	58.4	0.122		
Metropolitan	74,135	98.55	159	2.09	74.3	0.147		
Rural	40,617	99.77	95	2.36	32.7	0.073		
Vermont	62,781	99.82	137	2.10	67.2	0.138		
Metropolitan	10,422	99.91	21	1.91	46.6	0.093		
Rural	52,359	99.80	116	2.14	71.1	0.146		
Massachusetts	709,478	93.75	1,613	2.10	41.9-	0.091-		
Metropolitan	659,025	93.40	1,497	2.09	38.1-	0.082-		
Rural	50,453	98.58	116	2.32	88.5	0.219		
Rhode Island	132,332	97.59	198	1.45-	64.5	0.097		
Metropolitan	132,332	97.59	198	1.45-	64.5	0.097		
Rural	0	0.00	0	0.00	0.0	0.000		
Connecticut	396,761	97.56	784	1.96-	47.6	0.103		
Metropolitan	384,627	97.50	746	1.92-	47.4	0.101		
Rural	12,134	99.66	38	3.04	51.2	0.159		
Middle Atlantic	4,707,584	98.68	8,715	1.83-	50.9	0.094-		
Metropolitan	4,221,762	98.55	7,713	1.80-	50.3	0.091-		
Rural	485,822	99.76	1,002	2.09	54.9	0.114		
New York	2,143,249	98.98	3,891	1.74-	52.0	0.092-		
Metropolitan	1,922,371	98.89	3,419	1.70-	50.6	0.087-		
Rural	220,878	99.75	472	2.10	61.9	0.130		

See notes at end of table.

Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	1,754	1.95-	52.5	0.103
Metropolitan	916,155	97.84	1,754	1.95-	52.5	0.103
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	3,070	1.90-	48.4	0.091-
Metropolitan	1,389,236	98.56	2,540	1.87-	48.5	0.090-
Rural	264,944	99.78	530	2.08	48.4	0.098
North Central	6,901,975	96.39	16,880	2.38+	56.2	0.136+
Metropolitan	4,398,761	95.22	10,469	2.33+	56.4	0.135
Rural	2,503,214	98.51	6,411	2.47+	56.0	0.137
East North Central	4,745,430	97.76	10,853	2.29	55.5	0.129
Metropolitan	3,453,558	97.13	7,694	2.23	55.2	0.127
Rural	1,291,872	99.47	3,159	2.44+	56.1	0.135
Ohio	1,263,869	99.46	2,762	2.21	58.0	0.132
Metropolitan	987,528	99.60	2,112	2.17	57.4	0.129
Rural	276,341	98.95	650	2.36	60.2	0.141
Indiana	623,062	97.86	1,572	2.51+	53.2	0.135
Metropolitan	399,457	97.01	977	2.44	52.8	0.135
Rural	223,605	99.41	595	2.64	54.1	0.136
Illinois	1,265,011	95.90	3,118	2.41+	53.7	0.133
Metropolitan	952,934	94.73	2,237	2.32	52.7	0.125
Rural	312,077	99.68	881	2.69+	55.9	0.151
Michigan	982,444	96.86	1,892	1.98-	62.6	0.127
Metropolitan	744,347	96.06	1,464	2.00-	60.2	0.124
Rural	238,097	99.44	428	1.92	71.1	0.136
Wisconsin	611,044	99.60	1,509	2.41	47.9	0.115
Metropolitan	369,292	99.43	904	2.36	51.0	0.122
Rural	241,752	99.86	605	2.49	43.2	0.103
West North Central	2,156,545	93.50	6,027	2.58+	57.5	0.150+
Metropolitan	945,203	88.82	2,775	2.70+	59.6	0.162+
Rural	1,211,342	97.51	3,252	2.49+	55.9	0.140
Minnesota	397,258	77.30	1,098	2.46	67.7	0.174
Metropolitan	187,915	67.07	606	2.73+	68.3	0.197
Rural	209,343	89.55	492	2.18	66.9	0.153

See notes at end of table.



Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa						
Metropolitan	404,057	99.37	1,039	2.37	64.7	0.155
Rural	136,818	98.24	347	2.37	68.7	0.157
	267,239	99.96	692	2.37	63.0	0.155
Missouri						
Metropolitan	655,875	98.17	1,994	2.89+	53.1	0.156
Rural	383,255	96.99	1,149	2.82+	54.6	0.159
	272,620	99.88	845	3.00+	51.1	0.152
North Dakota						
Metropolitan	85,433	98.28	219	2.48	46.5	0.125
Rural	22,964	98.14	52	2.11	35.6	0.078
	62,469	98.34	167	2.62	49.5	0.142
South Dakota						
Metropolitan	96,216	99.59	254	2.46	48.4	0.116
Rural	20,427	99.92	55	2.59	20.1	0.045
	75,789	99.51	199	2.43	54.8	0.133
Nebraska						
Metropolitan	209,910	98.52	604	2.62	63.4	0.152
Rural	70,076	95.86	201	2.65	59.0	0.159
	139,834	99.91	403	2.61	65.7	0.148
Kansas						
Metropolitan	307,796	95.82	819	2.44	46.7	0.114
Rural	123,748	93.24	365	2.79	61.5	0.160
	184,048	97.63	454	2.22	36.9	0.088
South						
Metropolitan	8,980,101	97.94	20,514	2.33+	58.2	0.131
Rural	5,757,016	96.87	12,842	2.27	57.2	0.127
	3,223,085	99.91	7,672	2.43+	59.9	0.138
South Atlantic						
Metropolitan	4,668,855	96.31	9,731	2.16	54.0	0.114
Rural	3,313,125	94.94	6,754	2.09-	53.8	0.110
	1,355,730	99.84	2,977	2.32	54.5	0.120
Delaware						
Metropolitan	70,251	99.94	144	2.14	32.0	0.060
Rural	44,355	99.95	95	2.22	35.3	0.072
	25,896	99.94	49	2.01	25.1	0.041
Maryland						
Metropolitan	436,606	99.49	803	1.89-	34.8-	0.064-
Rural	395,091	99.44	717	1.86-	35.9-	0.067-
	41,515	99.95	86	2.12	25.1	0.049
District of Col.						
Metropolitan	66,196	99.75	125	1.71	20.2-	0.027-
Rural	0	99.75	125	1.71	20.2-	0.027-
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.

Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
<b>Virginia</b>						
Metropolitan	566,135	99.91	1,259	2.29	44.1	0.095
Rural	355,193	99.87	732	2.11	39.5	0.081-
	210,942	99.97	527	2.59	50.9	0.117
<b>West Virginia</b>						
Metropolitan	244,259	98.98	600	2.50	58.8	0.153
Rural	90,704	97.39	239	2.68	56.5	0.148
	153,555	99.95	361	2.40	60.2	0.156
<b>North Carolina</b>						
Metropolitan	689,138	99.93	1,539	2.34	56.4	0.127
Rural	346,905	99.89	822	2.45	54.7	0.129
	342,233	99.96	717	2.22	58.4	0.124
<b>South Carolina</b>						
Metropolitan	329,020	99.44	718	2.34	64.9	0.138
Rural	186,873	99.05	434	2.50	70.1	0.161
	142,147	99.95	284	2.14	57.1	0.110
<b>Georgia</b>						
Metropolitan	561,716	99.71	1,414	2.58+	65.8	0.167
Rural	313,319	99.54	791	2.59	68.7	0.181
	248,397	99.93	623	2.58	61.8	0.150
<b>Florida</b>						
Metropolitan	1,705,534	90.97	3,129	1.91-	55.2	0.105
Rural	1,514,489	90.04	2,799	1.90-	56.8	0.108
	191,045	99.17	330	1.99	40.9	0.077
<b>East South Central</b>						
Metropolitan	1,726,272	99.80	4,178	2.43+	67.6+	0.158+
Rural	873,594	99.64	2,060	2.37	64.2	0.148
	852,678	99.97	2,118	2.48+	70.7+	0.168+
<b>Kentucky</b>						
Metropolitan	422,657	99.70	1,086	2.57+	60.8	0.152
Rural	183,264	99.37	395	2.13	51.1	0.104
	239,393	99.96	691	2.92+	66.0	0.188
<b>Tennessee</b>						
Metropolitan	550,327	99.65	1,563	2.88+	69.9	0.195+
Rural	342,007	99.46	944	2.76+	58.7	0.156
	208,320	99.96	619	3.06+	86.2+	0.259+
<b>Alabama</b>						
Metropolitan	463,131	99.97	929	2.03	67.8	0.131
Rural	281,960	99.97	566	2.04	78.8	0.156
	181,171	99.97	363	2.01	50.5	0.092
<b>Mississippi</b>						
Metropolitan	290,157	99.98	600	2.01	73.6	0.140
Rural	66,363	99.96	155	2.39	77.8	0.185
	223,794	99.98	445	1.91	72.1	0.127

See notes at end of table.

Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central						
Metropolitan	2,584,974	99.74	6,605	2.56+	58.4	0.144+
Rural	1,570,297	99.59	4,028	2.60+	59.4	0.151+
	1,014,677	99.97	2,577	2.52+	56.8	0.134
Arkansas						
Metropolitan	321,739	99.96	789	2.49	61.4	0.153
Rural	100,966	99.98	247	2.42	55.5	0.137
	220,773	99.95	542	2.51	64.1	0.160
Louisiana						
Metropolitan	415,968	99.98	894	2.12	58.6	0.116
Rural	268,137	99.98	602	2.24	53.5	0.116
	147,831	99.99	292	1.92	69.2	0.115
Oklahoma						
Metropolitan	378,716	99.02	1,049	2.69+	52.6	0.140
Rural	180,038	98.00	531	2.87+	59.3	0.173
	198,678	99.96	518	2.53	45.8	0.112
Texas						
Metropolitan	1,468,551	99.81	3,873	2.68+	59.4	0.151+
Rural	1,021,156	99.73	2,648	2.66+	61.2	0.157+
	447,395	99.97	1,225	2.72+	55.4	0.139
West						
Metropolitan	4,539,951	93.08	10,338	2.34+	54.4	0.126
Rural	3,642,859	91.96	8,446	2.34+	54.6	0.126
	897,092	97.88	1,892	2.31	53.6	0.125
Mountain						
Metropolitan	1,200,638	94.36	2,627	2.34	56.5	0.129
Rural	720,893	92.10	1,589	2.33	58.7	0.134
	479,745	97.98	1,038	2.36	53.3	0.122
Montana						
Metropolitan	97,248	99.90	277	2.97+	41.1	0.123
Rural	21,173	99.90	39	1.92	0.0	0.000
	76,075	99.91	238	3.26+	48.2	0.155
Idaho						
Metropolitan	109,822	99.77	197	1.92	54.6	0.103
Rural	18,471	99.90	35	1.97	54.1	0.112
	91,351	99.74	162	1.91	54.8	0.101
Wyoming						
Metropolitan	42,408	99.91	82	2.00	44.2	0.094
Rural	12,265	99.93	28	2.37	0.0	0.000
	30,143	99.89	54	1.85	64.0	0.129
Colorado						
Metropolitan	266,663	94.73	663	2.48	51.5	0.125
Rural	201,737	95.23	536	2.63	53.3	0.137
	64,926	93.22	127	1.98	44.7	0.087

See notes at end of table.



Table 2. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	299	2.52	84.4	0.195
Metropolitan	51,612	85.86	115	2.32	93.8	0.203
Rural	73,759	97.76	184	2.67	78.8	0.189
Arizona	348,748	91.33	761	2.43	53.5	0.127
Metropolitan	257,931	89.11	586	2.45	54.8	0.135
Rural	90,817	98.31	175	2.38	48.8	0.107
Utah	128,579	99.92	241	2.00	78.7	0.154
Metropolitan	93,319	99.94	173	1.96	92.4	0.168
Rural	35,260	99.88	68	2.09	50.7	0.116
Nevada	81,799	86.15	107	1.62-	38.6	0.061
Metropolitan	64,385	84.73	77	1.48-	62.3	0.079
Rural	17,414	91.83	30	2.13	0.0	0.000
Pacific	3,339,313	92.62	7,711	2.34	53.7	0.126
Metropolitan	2,921,966	91.93	6,857	2.35	53.7	0.125
Rural	417,347	97.77	854	2.26	53.9	0.129
Washington	461,706	92.41	1,118	2.45	51.3	0.129
Metropolitan	346,977	90.86	869	2.50	49.2	0.125
Rural	114,729	97.42	249	2.31	58.0	0.141
Oregon	303,778	86.84	595	1.97	50.1	0.103
Metropolitan	181,677	80.38	364	1.91	57.1	0.108
Rural	122,101	98.65	231	2.09	40.5	0.096
California	2,477,248	93.71	5,866	2.38+	54.0	0.127
Metropolitan	2,330,007	93.36	5,529	2.37+	53.8	0.127
Rural	147,241	99.57	337	2.56	55.9	0.146
Alaska	16,348	99.78	25	1.95	125.1	0.226
Metropolitan	5,625	99.75	6	1.43	262.8	0.263
Rural	10,723	99.80	19	2.21	99.2	0.211
Hawaii	80,233	83.64	107	1.58-	72.1	0.106
Metropolitan	57,680	83.31	89	1.83	66.1	0.115
Rural	22,553	84.47	18	0.93-	98.9	0.087

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	59,773	2.24	55.3	0.123
Northeast	6,276,897	98.04	12,041	1.88-	50.1	0.095-
New England	1,569,313	96.20	3,326	2.02-	48.0	0.099-
Maine	153,209	99.88	340	2.15	54.0	0.105
Bangor, ME	16,035	99.87	37	2.23	38.8	0.060
Lewiston-Auburn, ME	13,464	99.93	43	3.00	61.8	0.212
Portland, ME	52,846	99.89	119	2.17	51.9	0.109
New Hampshire	114,752	98.98	254	2.18	58.4	0.122
Manchester, NH	44,397	97.91	89	1.91	79.5	0.131
Portsmouth, NH	29,738	99.52	70	2.37	69.0	0.172
Vermont	62,781	99.82	137	2.10	67.2	0.138
Burlington, VT	10,422	99.91	21	1.91	46.6	0.093
Massachusetts	709,478	93.75	1,613	2.10	41.9-	0.091-
Boston, MA	429,794	95.67	990	2.09	37.1-	0.079-
New Bedford, MA	65,540	98.67	122	1.83	38.9	0.077
Pittsfield, MA	20,281	91.00	53	2.47	29.9	0.093
Springfield, MA	72,225	92.57	166	2.18	36.7	0.080
Worcester, MA	71,185	79.42	166	2.10	48.0	0.102
Rhode Island	132,332	97.59	198	1.45-	64.5	0.097
Providence, RI	132,332	97.59	198	1.45-	64.5	0.097
Connecticut	396,761	97.56	784	1.96-	47.6	0.103
Bridgeport, CT	96,911	96.63	174	1.77	36.8	0.072
Hartford, CT	157,139	99.16	325	2.06	51.4	0.121
New Haven, CT	102,964	95.31	210	2.00	36.2	0.076
New London, CT	27,613	99.70	37	1.37	118.6	0.187

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment			Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees	Per 1,000 non-HMD enrollees
Middle Atlantic	4,707,584	98.68	8,715	1.83-	50.9	0.094-			
New York	2,143,249	98.98	3,891	1.74-	52.0	0.092-			
Albany, NY	115,122	98.78	258	2.17	76.2	0.170			
Binghamton, NY	35,576	99.96	108	2.97	16.0-	0.055			
Buffalo, NY	134,451	98.66	149	1.13-	62.2	0.069-			
Elmira, NY	13,699	99.94	25	1.78	35.5	0.071			
Glens Falls, NY	15,222	99.63	39	2.50	0.0	0.000			
Nassau-Suffolk, NY	297,143	99.88	530	1.82-	55.8	0.108			
New York, NY	997,473	99.58	1,702	1.57-	48.2	0.075-			
Niagara Falls, NY	30,841	99.69	24	0.83-	125.2	0.106			
Orange County, NY	30,488	99.89	53	1.73	0.0	0.000			
Poughkeepsie, NY	27,864	98.47	59	2.04	15.3	0.033-			
Rochester, NY	102,542	88.80	197	1.80	63.2	0.127			
Syracuse, NY	75,217	99.92	152	2.01	65.5	0.134			
Utica-Rome, NY	46,733	99.90	123	2.62	32.0	0.085			
New Jersey	916,155	97.84	1,754	1.95-	52.5	0.103			
Atlantic City, NJ	46,406	97.93	84	1.77	71.3	0.125			
Bergen-Passaic, NJ	171,246	99.45	360	2.13	57.6	0.120			
Jersey City, NJ	64,069	99.25	91	1.43-	32.0	0.048-			
Middlesex, NJ	91,009	94.70	170	2.03	46.1	0.100			
Monmouth-Ocean, NJ	154,643	99.57	326	2.19	50.4	0.109			
Newark, NJ	211,511	99.40	375	1.75-	53.5	0.094			
Trenton, NJ	38,499	97.14	81	2.14	37.2	0.080			
Vineland, NJ	16,382	96.17	31	1.98	61.9	0.131			
Pennsylvania	1,648,180	98.75	3,070	1.90-	48.4	0.091-			
Allentown, PA-NJ	94,668	99.09	130	1.44-	15.5-	0.023-			
Altoona, PA	20,692	99.99	36	1.71	109.4	0.191			
Beaver County, PA	27,562	99.95	64	2.61	159.9	0.377			
Erie, PA	35,244	99.92	57	1.72	18.9	0.030-			
Harrisburg, PA	72,929	99.95	96	1.33-	100.8	0.128			
Johnstown, PA	40,260	99.97	64	1.71	14.2-	0.026-			
Lancaster, PA	48,045	99.93	70	1.41-	59.0	0.098			
Philadelphia PA-NJ	569,054	95.81	1,139	1.98-	46.2	0.088-			
Pittsburgh, PA	323,494	99.06	614	2.00	42.7	0.087			
Reading, PA	48,476	99.88	96	2.00	74.5	0.146			
Scranton, PA	122,888	99.95	211	1.78	30.7	0.053-			
Sharon, PA	19,009	99.97	36	1.98	29.2	0.055			
State College, PA	10,032	99.97	15	1.54	71.2	0.103			
Williamsport, PA	16,877	99.98	42	2.45	107.4	0.233			
York, PA	48,541	99.96	96	2.02	65.7	0.125			

See notes at end of table.



Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	16,880	2.38+	56.2	0.136
East North Central	4,745,430	97.76	10,853	2.29	55.5	0.129
Ohio	1,263,869	99.46	2,762	2.21	58.0	0.132
Akron, OH	75,615	99.90	193	2.59	58.5	0.149
Canton, OH	51,895	99.97	102	2.04	81.6	0.160
Cincinnati, OH-KY-IN	159,407	99.96	385	2.34	62.8	0.149
Cleveland, OH	242,585	99.71	373	1.58-	42.0	0.069-
Columbus, OH	121,377	99.73	317	2.58	48.2	0.133
Columbus, OH	103,547	99.95	256	2.52	57.4	0.161
Dayton, OH	26,009	99.95	68	2.62	65.1	0.156
Hamilton, OH	19,579	99.97	32	1.61	41.8	0.100
Lima, OH	27,340	99.85	35	1.39	79.2	0.122
Lorain-Elyria, OH	15,230	99.96	25	1.70	51.3	0.070
Mansfield, OH	21,934	98.57	50	2.50	74.3	0.204
Steubenville, OH-WV	70,660	99.95	156	2.18	77.9	0.171
Toledo, OH	69,319	99.95	161	2.53	47.8	0.127
Youngstown, OH						
Indiana	623,062	97.86	1,572	2.51+	53.2	0.135
Anderson, IN	17,198	99.83	47	2.81	108.9	0.310
Bloomington, IN	7,913	99.87	23	2.88	36.1	0.126
Elkhart-Goshen, IN	15,647	99.92	22	1.38	0.0	0.000
Evansville, IN-KY	34,434	95.72	83	2.33	55.0	0.142
Fort Wayne, IN	37,565	97.77	110	2.85	43.6	0.130
Gary-Hammond, IN	61,160	97.01	141	2.57	60.2	0.150
Indianapolis, IN	118,407	93.81	270	2.21	53.8	0.135
Kokomo, IN	10,842	99.94	27	2.52	48.9	0.095
Lafayette, IN	11,228	99.92	28	2.39	0.0	0.000
Muncie, IN	13,759	99.91	33	2.40	104.7	0.304
South Bend, IN	33,170	99.93	81	2.42	53.4	0.121
Terre Haute, IN	19,585	99.89	64	3.11	33.1	0.100
Illinois	1,265,011	95.90	3,118	2.41	53.7	0.133
Aurora-Elgin, IL	30,946	98.68	74	2.29	52.5	0.125
Bloomington, IL	12,672	99.94	41	3.00	73.8	0.217
Champaign, IL	13,391	99.91	49	3.52	17.4	0.072
Chicago, IL	608,135	92.94	1,294	2.11	50.5	0.107
Decatur, IL	15,992	99.97	55	3.27	53.1	0.179
Joliet, IL	28,047	97.18	95	3.45	66.7	0.261
Kankakee, IL	12,020	99.94	31	2.61	30.9	0.084
Lake County, IL	36,039	96.52	71	2.02	15.1-	0.029-
Peoria, IL	43,549	99.93	111	2.49	83.5	0.203
Rockford, IL	28,351	88.93	82	2.84	63.5	0.172
Springfield, IL	24,799	99.96	69	2.62	81.2	0.236

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees		
Michigan	982,444	96.86	1,892	1.98-	62.6	0.127		
Ann Arbor, MI	17,760	95.12	37	1.99	122.7	0.270		
Battle Creek, MI	16,831	99.89	40	2.35	24.6	0.059		
Benton Harbor, MI	21,618	99.88	46	2.18	96.3	0.190		
Detroit, MI	448,826	96.43	832	1.91-	56.4	0.114		
Flint, MI	43,084	91.01	83	1.93	66.7	0.120		
Grand Rapids, MI	64,091	95.42	174	2.62	66.7	0.163		
Jackson, MI	17,046	99.82	40	2.37	0.0	0.000		
Kalamazoo, MI	21,512	99.85	57	2.57	31.0	0.092		
Lansing, MI	32,460	90.23	49	1.45	85.7	0.149		
Muskegon, MI	18,957	98.06	46	2.54	88.6	0.226		
Saginaw, MI	42,162	96.18	60	1.48-	69.4	0.100		
Wisconsin	611,044	99.60	1,509	2.41	47.9	0.115		
Appleton, WI	34,483	99.96	71	2.02	30.7	0.055		
Eau Claire, WI	16,955	99.94	37	2.13	0.0	0.000		
Green Bay, WI	19,185	99.97	43	2.22	23.4	0.052		
Janesville, WI	16,529	99.85	41	2.36	95.8	0.229		
Kenosha, WI	14,291	99.91	32	2.25	122.9	0.279		
LaCrosse, WI	11,858	99.91	20	1.56	54.0	0.077		
Madison, WI	30,776	99.74	107	3.28	10.0-	0.030-		
Milwaukee, WI	166,813	99.21	412	2.37	58.5	0.149		
Racine, WI	20,503	99.90	55	2.64	21.7	0.047		
Sheboygan, WI	14,461	99.98	25	1.68	82.2	0.132		
Wausau, WI	12,945	99.95	33	2.58	91.7	0.300		
West North Central	2,156,545	93.50	6,027	2.58+	57.5	0.150+		
Minnesota	397,258	77.30	1,098	2.46	67.7	0.174		
Duluth, MN-WI	29,977	76.74	102	3.22	45.1	0.157		
Minneapolis, MN-WI	141,769	64.45	452	2.65	70.1	0.192		
Rochester, MN	9,393	99.67	26	2.42	141.7	0.373		
St. Cloud, MN	12,248	70.92	35	2.47	69.7	0.195		
Iowa	404,057	99.37	1,039	2.37	64.7	0.155		
Cedar Rapids, IA	19,323	99.94	57	2.79	36.8	0.097		
Davenport, IA-IL	44,646	99.94	101	2.22	99.7	0.243		
Des Moines, IA	40,067	94.50	120	2.75	65.0	0.163		
Dubuque, IA	11,460	99.95	21	1.68	75.5	0.164		
Iowa City, IA	6,240	99.90	18	2.63	100.9	0.296		
Sioux City, IA-NE	15,951	99.96	27	1.54	41.3	0.055		
Waterloo, IA	19,521	99.96	34	1.63	61.6	0.097		

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Missouri	655,875	98.17	1,994	2.89+	53.1	0.156
Columbia, MO	8,560	99.98	25	2.77	150.5	0.329
Joplin, MO	19,275	99.95	68	3.47	0.0	0.000
Kansas City, MO-KS	154,919	95.72	473	2.87+	50.9	0.146
St. Joseph, MO	13,630	99.97	44	2.99	123.1	0.407
St. Louis, MO-IL	283,167	97.43	825	2.78+	53.2	0.158
Springfield, MO	27,676	99.94	89	3.08	43.6	0.139
North Dakota	85,433	98.28	219	2.48	46.5	0.125
Bismarck, ND	8,160	95.13	10	1.17	89.3	0.117
Fargo, ND-MN	14,138	96.57	46	2.95	0.0	0.000
Grand Forks, ND	5,687	99.95	15	2.42	49.8	0.153
South Dakota	96,216	99.59	254	2.46	48.4	0.116
Rapid City, SD	7,152	99.89	16	2.29	0.0	0.000
Sioux Falls, SD	13,275	99.93	39	2.73	26.1	0.068
Nebraska	209,910	98.52	604	2.62	63.4	0.152
Lincoln, NE	20,994	98.50	46	1.97	50.2	0.127
Omaha, NE-IA	57,609	95.39	186	3.03	57.4	0.163
Kansas	307,796	95.82	819	2.44	46.7	0.114
Lawrence, KS	4,965	87.78	18	3.24	76.6	0.177
Topeka, KS	18,983	97.26	46	2.16	115.2	0.230
Wichita, KS	45,844	88.57	129	2.63	48.2	0.123
South	8,980,101	97.94	20,514	2.33+	58.2	0.131
South Atlantic	4,668,855	96.31	9,731	2.16	54.0	0.114
Delaware	70,251	99.94	144	2.14	32.0	0.060
Wilmington, DE-NJ-MD	58,114	99.65	117	2.11	28.9	0.055
Maryland	436,606	99.49	803	1.89-	34.8-	0.064-
Baltimore, MD	244,878	99.90	412	1.73-	31.6-	0.056-
Cumberland, MD-WV	17,051	99.95	50	3.00	60.8	0.185
Hagerstown, MD	14,522	99.95	15	1.05-	0.0	0.000
District of Col.	66,196	99.75	125	1.71	20.2-	0.027-
Washington, DC-MD-VA	261,121	99.05	519	1.98	29.7-	0.054-

See notes at end of table.



Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Virginia	566,135	99.91	1,259	2.29	44.1	0.095
Charlottesville, VA	12,020	99.92	27	2.23	0.0	0.000
Danville, VA	15,532	99.99	29	1.95	39.9	0.068
Lynchburg, VA	18,110	99.99	43	2.35	67.5	0.167
Norfolk, VA	102,601	99.96	220	2.27	60.7	0.141
Richmond, VA	85,698	99.98	154	1.80	31.0	0.049-
Roanoke, VA	30,622	99.98	70	2.16	16.6	0.030-
West Virginia	244,259	98.98	600	2.50	58.8	0.153
Charleston, WV	34,215	99.96	79	2.40	53.7	0.124
Huntington, WV-KY-OH	40,891	99.95	104	2.57	28.9	0.073
Parkersburg, WV-OH	19,888	99.94	64	3.14	47.8	0.144
Wheeling, WV-OH	22,016	82.51	58	2.58	129.6	0.272
North Carolina	689,138	99.93	1,539	2.34	56.4	0.127
Asheville, NC	24,469	99.92	71	2.81	14.2-	0.039
Burlington, NC	14,505	99.99	30	2.21	104.7	0.235
Charlotte, NC	109,337	99.79	275	2.64	44.3	0.123
Fayetteville, NC	13,388	99.98	21	1.74	53.5	0.091
Greensboro, NC	99,387	99.97	253	2.61	60.4	0.152
Hickory, NC	23,392	99.97	56	2.59	149.6	0.298
Jacksonville, NC	5,134	99.86	9	2.03	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	111	1.97	75.3	0.131
Wilmington, NC	12,634	99.97	21	1.77	0.0	0.000
South Carolina	329,020	99.44	718	2.34	64.9	0.138
Anderson, SC	16,583	99.70	32	2.06	81.9	0.138
Charleston, SC	34,246	98.90	75	2.38	0.0	0.000
Columbia, SC	35,361	99.98	75	2.25	63.9	0.129
Florence, SC	11,195	99.96	14	1.35	79.6	0.104
Greenville, SC	65,893	98.01	183	2.95	89.1	0.243
Georgia	561,716	99.71	1,414	2.58+	65.8	0.167
Albany, GA	9,292	99.92	21	2.33	56.0	0.119
Athens, GA	13,510	99.96	42	3.12	51.0	0.156
Atlanta, GA	189,539	99.27	519	2.78+	74.4	0.205
Augusta, GA-SC	32,938	99.93	73	2.35	42.9	0.103
Columbus, GA-AL	22,847	99.96	46	2.13	135.5	0.301
Macon, GA	25,929	99.97	47	1.87	45.3	0.087
Savannah, GA	25,338	99.94	47	1.94	70.8	0.174

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Florida	1,705,534	90.97	3,129	1.91-	55.2	0.105
Bradenton, FL	42,906	99.68	116	2.71	43.5	0.111
Daytona Beach, FL	62,616	92.90	89	1.46-	97.5	0.175
Fort Lauderdale, FL	181,839	81.09	344	1.86	53.9	0.100
Fort Myers, FL	61,428	99.65	48	0.92-	59.2	0.056
Fort Pierce, FL	41,198	99.28	72	2.09	64.1	0.144
FT. Walton Beach, FL	10,169	99.88	19	2.23	202.5	0.496
Gainesville, FL	16,758	99.58	21	1.32	60.5	0.062
Jacksonville, FL	80,895	98.22	96	1.23-	40.2	0.052-
Lakeland, FL	55,495	99.56	113	2.22	34.2	0.078
Melbourne, FL	46,501	99.72	76	1.95	27.6	0.052
Miami-Hialeah, FL	168,502	79.57	280	1.47-	60.8	0.078
Naples, FL	23,433	99.75	15	0.79-	106.6	0.104
Ocala, FL	31,367	99.50	42	1.67	0.0	0.000
Orlando, FL	90,604	98.55	198	2.30	65.5	0.152
Panama City, FL	11,817	99.70	17	1.65	72.6	0.100
Pensacola, FL	29,972	99.89	63	2.30	101.6	0.227
Sarasota, FL	77,895	99.81	188	2.56	46.7	0.129
Tallahassee, FL	17,414	97.85	34	1.98	107.9	0.178
Tampa, FL	323,951	87.05	700	2.14	57.1	0.124
West Palm Beach, FL	139,729	85.22	268	2.01	46.8	0.095
East South Central	1,726,272	99.80	4,178	2.43+	67.6+	0.158+
Kentucky	422,657	99.70	1,086	2.57+	60.8	0.152
Lexington, KY	31,008	98.87	71	2.23	29.1	0.063
Louisville, KY-IN	107,485	99.20	199	1.83	62.4	0.114
Owensboro, KY	10,319	99.96	30	2.94	0.0	0.000
Tennessee	550,327	99.65	1,563	2.88+	69.9	0.195+
Chattanooga, TN-GA	50,061	99.97	163	3.28+	77.2	0.250
Clarksville, TN-KY	12,541	99.91	43	3.43	80.6	0.234
Jackson, TN	10,064	99.95	28	2.58	0.0	0.000
Johnson City, TN-VA	55,068	99.97	153	2.90	43.7	0.116
Knoxville, TN	70,970	99.96	216	3.14+	70.5	0.225
Memphis, TN-AR-MS	88,836	98.06	187	2.06	73.5	0.134
Nashville, TN	92,994	99.96	273	2.92	48.3	0.141

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Alabama	463,131	99.97	929	2.03	67.8	0.131
Anniston, AL	13,124	99.97	28	2.28	86.9	0.174
Birmingham, AL	108,546	99.98	189	1.72-	82.5	0.130
Dothan, AL	12,690	99.94	16	1.29	0.0	0.000
Florence, AL	16,687	99.97	26	1.63	102.4	0.192
Gadsden, AL	14,295	99.97	40	3.02	52.5	0.162
Huntsville, AL	17,137	99.96	48	2.98	152.8	0.459
Mobile, AL	50,513	99.96	114	2.38	58.5	0.151
Montgomery, AL	29,832	99.97	70	2.30	81.3	0.170
Tuscaloosa, AL	13,604	99.99	23	1.66	46.4	0.072
Mississippi	290,157	99.98	600	2.01	73.6	0.140
Biloxi-Gulfport, MS	18,079	99.97	55	3.31	116.4	0.368
Jackson, MS	35,305	99.98	73	1.99	52.9	0.108
Pascagoula, MS	8,556	99.88	15	2.02	0.0	0.000
West South Central	2,584,974	99.74	6,605	2.56+	58.4	0.144+
Arkansas	321,739	99.96	789	2.49	61.4	0.153
Fayetteville, AR	11,803	99.95	24	2.04	56.4	0.082
Fort Smith, AR-OK	21,413	99.98	69	3.24	45.9	0.190
Little Rock, AR	50,966	99.99	137	2.67	55.3	0.139
Pine Bluff, AR	11,012	99.98	6	0.52-	0.0	0.000
Louisiana	415,968	99.98	894	2.12	58.6	0.116
Alexandria, LA	13,819	99.96	25	1.74	0.0	0.000
Baton Rouge, LA	39,583	99.97	90	2.35	34.0	0.079
Houma-Thibodaux, LA	13,501	100.00	16	1.30	0.0	0.000
Lafayette, LA	14,620	99.99	23	1.58	40.3	0.070
Lake Charles, LA	16,436	99.98	33	2.17	0.0	0.000
Monroe, LA	14,648	99.99	64	4.16	36.1	0.126
New Orleans, LA	118,708	99.98	242	2.03	75.8	0.164
Shreveport, LA	36,822	99.98	109	2.78	59.2	0.148
Oklahoma	378,716	99.02	1,049	2.69+	52.6	0.140
Enid, OK	8,215	99.94	13	1.47	0.0	0.000
Lawton, OK	8,221	99.99	28	3.63	37.4	0.131
Oklahoma City, OK	88,646	97.45	255	2.76	63.4	0.174
Tulsa, OK	71,032	98.13	225	3.11+	60.5	0.196

See notes at end of table.



Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	3,873	2.68+	59.4	0.151+
Abilene, TX	13,100	99.96	43	3.16	38.2	0.144
Amarillo, TX	19,063	99.97	62	3.34	91.2	0.336
Austin, TX	47,578	99.95	166	3.45+	49.7	0.146
Beaumont, TX	42,323	99.98	82	2.01	30.6	0.050
Brazoria, TX	12,486	99.78	27	2.44	66.8	0.187
Brownsville, TX	20,169	99.86	26	1.43	75.2	0.103
Bryan, TX	6,955	99.96	15	2.11	230.3	0.553
Corpus Christi, TX	28,417	95.56	65	2.44	91.2	0.228
Dallas, TX	172,118	99.95	514	2.98+	71.3	0.205
El Paso, TX	37,292	99.94	80	2.34	34.0	0.086
Fort Worth, TX	97,947	99.96	296	3.06+	72.9	0.235
Galveston, TX	19,376	99.94	21	1.17-	48.7	0.057
Houston, TX	187,992	99.85	458	2.55	47.0	0.110
Killeen-Temple, TX	17,182	99.97	53	3.08	41.7	0.115
Laredo, TX	8,421	99.99	19	2.25	155.6	0.328
Longview, TX	20,547	99.98	45	2.13	46.5	0.094
Lubbock, TX	18,957	99.97	64	3.51	54.6	0.167
McAllen, TX	27,402	99.82	51	2.13	42.1	0.077
Midland, TX	7,362	99.96	15	2.17	0.0	0.000
Odessa, TX	9,207	99.99	26	3.22	0.0	0.000
San Angelo, TX	11,213	99.99	33	2.93	27.9	0.089
San Antonio, TX	107,989	99.28	275	2.58	57.0	0.150
Sherman-Denison, TX	14,532	99.99	28	1.87	0.0	0.000
Texas-Kana, TX-AR	15,315	99.99	42	2.68	150.4	0.312
Tyler, TX	18,223	99.98	35	1.97	96.2	0.172
Victoria, TX	6,871	99.97	8	1.25	0.0	0.000
Waco, TX	23,624	99.99	65	2.66	77.8	0.204
Wichita Falls, TX	14,462	99.97	45	2.96	85.8	0.265
West	4,539,951	93.08	10,338	2.34+	54.4	0.126
Mountain	1,200,638	94.36	2,627	2.34	56.5	0.129
Montana	97,248	99.90	277	2.97+	41.1	0.123
Billings, MT	12,097	99.88	21	1.82	0.0	0.000
Great Falls, MT	9,076	99.91	18	2.06	0.0	0.000
Idaho	109,822	99.77	197	1.92	54.6	0.103
Boise City, ID	18,471	99.90	35	1.97	54.1	0.112
Wyoming	42,408	99.91	82	2.00	44.2	0.094
Casper, WY	5,379	99.91	13	2.51	0.0	0.000
Cheyenne, WY	6,886	99.96	15	2.26	0.0	0.000

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	663	2.48	51.5	0.125
Boulder-Longmont, CO	15,143	97.96	32	1.98	33.6	0.061
Colorado Springs, CO	24,899	95.03	75	3.13	40.3	0.129
Denver, CO	119,624	94.10	330	2.70	55.2	0.149
Fort Collins, CO	15,089	99.71	20	1.33	91.3	0.129
Greeley, CO	11,610	99.62	54	4.72+	83.9	0.333
Pueblo, CO	15,372	94.43	25	1.67	0.0	0.000
New Mexico	125,371	92.49	299	2.52	84.4	0.195
Albuquerque, NM	33,783	81.01	76	2.31	96.5	0.186
Las Cruces, NM	9,375	99.94	21	2.48	122.3	0.343
Santa Fe, NM	8,454	93.66	18	2.22	50.3	0.121
Arizona	348,748	91.33	761	2.43	53.5	0.127
Phoenix, AZ	187,381	86.74	410	2.36	58.9	0.140
Tucson, AZ	70,550	96.06	176	2.67	45.5	0.120
Utah	128,579	99.92	241	2.00	78.7	0.154
Provo-Orem, UT	16,076	99.93	30	2.05	166.0	0.333
Salt Lake City, UT	77,243	99.94	143	1.94	75.6	0.135
Nevada	81,799	86.15	107	1.62-	38.6	0.061
Las Vegas, NV	45,252	82.98	40	1.12-	86.0	0.088
Reno, NV	19,133	89.17	37	2.26	34.1	0.061
Pacific	3,339,313	92.62	7,711	2.34	53.7	0.126
Washington	461,706	92.41	1,118	2.45	51.3	0.129
Bellevue, WA	13,629	99.51	41	2.96	71.2	0.208
Bremerton, WA	15,439	96.59	51	3.42	51.8	0.198
Olympia, WA	14,254	90.98	40	2.80	56.3	0.138
Richland, WA	12,559	99.85	26	2.38	29.5	0.093
Seattle, WA	159,828	86.57	422	2.59	40.8	0.104
Spokane, WA	41,237	94.51	65	1.52	83.9	0.114
Tacoma, WA	50,245	97.24	140	2.85	48.1	0.142
Vancouver, WA	17,048	80.32	26	1.57	32.2	0.060
Yakima, WA	22,738	99.74	58	2.61	69.8	0.215
Oregon	303,778	86.84	595	1.97	50.1	0.103
Eugene, OR	28,947	88.67	49	1.75	58.8	0.104
Medford, OR	20,326	99.78	20	1.05-	0.0	0.000
Portland, OR	99,155	72.79	238	2.18	63.7	0.136
Salem, OR	33,249	90.39	57	1.65	53.1	0.083

See notes at end of table.

Table 3. Other arthroplasty of hip: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
California	2,477,248	93.71	5,866	2.38+	54.0	0.127
Anaheim-Santa Ana, CA	167,171	89.39	496	2.84+	34.2	0.098
Bakersfield, CA	44,969	99.76	94	2.34	73.9	0.196
Chico, CA	27,102	99.09	56	2.24	45.3	0.116
Fresno, CA	58,425	99.90	162	2.82	61.9	0.166
Los Angeles, CA	677,939	91.40	1,647	2.35	55.2	0.127
Merced, CA	13,462	99.86	18	1.47	113.7	0.160
Modesto, CA	33,619	98.80	103	3.23	60.0	0.185
Oakland, CA	188,258	99.08	409	2.18	62.3	0.132
Oxnard-Ventura, CA	49,488	93.74	120	2.51	37.3	0.083
Redding, CA	17,796	99.73	19	1.23	0.0	0.000
Riverside, CA	203,246	90.92	442	2.29	50.9	0.117
Sacramento, CA	120,273	91.81	267	2.36	50.6	0.115
Salinas, CA	29,131	99.86	79	2.79	145.2	0.414
San Diego, CA	205,402	91.35	440	2.20	64.5	0.149
San Francisco, CA	163,753	89.02	480	2.76+	53.9	0.151
San Jose, CA	105,258	99.50	186	1.78	60.9	0.096
Santa Barbara, CA	38,021	99.70	98	2.51	36.9	0.099
Santa Cruz, CA	24,640	99.77	57	2.19	19.0	0.036
Santa Rosa, CA	44,775	99.49	103	2.32	47.7	0.109
Stockton, CA	40,855	91.54	93	2.37	22.1	0.047
Vallejo, CA	35,778	98.59	73	2.12	14.5-	0.027-
Visalia, CA	28,811	99.91	66	2.43	41.3	0.105
Yuba City, CA	11,835	99.35	21	1.98	118.2	0.277
Alaska	16,348	99.78	25	1.95	125.1	0.226
Anchorage, AK	5,625	99.75	6	1.43	262.8	0.263
Hawaii	80,233	83.64	107	1.58-	72.1	0.106
Honolulu, HI	57,680	83.31	89	1.83	66.1	0.115

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.



# Total knee replacement

Total knee replacement is an operation frequently performed for patients with osteoarthritis. There were 54,210 hospitalizations for total knee replacement among the aged Medicare population in 1986. This represented 2.03 discharges per 1,000 enrollees. The 30-day post-admission death rate was only 5.5 per 1,000 discharges, or about one-half of 1 percent, reflecting the elective nature of the procedure.

## Age and sex patterns

Women underwent hospitalization for total knee replacement more frequently than men in all age groups. Across all age groups, women underwent total knee replacement about 45 percent more frequently than men (2.32 discharges per 1,000 women versus 1.60 discharges per 1,000 men). Hospitalization for total knee replacement occurred most commonly among persons aged 75–84 years for both men and women. The procedure was least common among enrollees 85 years of age or over.

The 30-day post-admission death rate per 1,000 discharges was substantially higher for men than for women at all ages. For example, there were more than twice as many deaths per 1,000 discharges among men aged 75–84 years as among women in that age group (12.8 deaths per 1,000 discharges versus 6.0).

NOTE: Total knee replacement is ICD-9-CM code 81.41.

## Patterns by race

Discharges per 1,000 enrollees for total knee replacement were substantially higher for white enrollees than for black enrollees across all age and sex groups. Across all age groups, white men experienced three times as many discharges (1.70 per 1,000 enrollees) as did black men (0.57 per 1,000). The difference was less for women, with discharge rates of 2.38 and 1.64 per 1,000 for white women and black women, respectively.

The 30-day post-admission death rate per 1,000 discharges did not show a clear pattern by race, but death rates for black enrollees were unstable, reflecting small numbers of cases, particularly for enrollees 85 years of age or over.

## Variations by geographic area

Tables 2 and 3 contain data on utilization and on 30-day post-admission deaths by geographic area. The tables are aggregated by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 2, and data by metropolitan statistical area (MSA) are shown in Table 3. Figures 1 and 2 are derived from the data in these tables.

## Discharge rates

As with total hip replacement, there was substantial regional variation for total knee replacement in the number of discharges per

1,000 enrollees. As shown in Figure 1, the highest rates were in the West and North Central Regions of the United States, with the exception of the west coast. The highest rate was in Iowa (4.03 discharges per 1,000). The lowest rates were in the Eastern States, particularly the Southeast, and Hawaii. Hawaii exhibited the lowest rate, at 0.91 discharges per 1,000 enrollees.

Differences in discharge rates by census division are shown in Figure 2. The highest median rate was in the West North Central Division, followed by the Mountain Division. The lowest median rate was in the East South Central Division.

As with total hip replacement, much of the regional differences in rates of total knee replacement may be due to differences in the racial characteristics of the regions. The West has a higher percent of white enrollees who have the highest rates of total knee replacement. Hawaii and the Southeast have lower percents of white enrollees and lower rates of total knee replacement.

The variation among MSAs with respect to discharges per 1,000 enrollees was substantial. The coefficient of variation (0.39) was the highest of any procedure in this volume, with the exceptions of coronary angioplasty and carotid endarterectomy.

## Urban-rural patterns

Nationwide, the discharge rate for total knee replacement was higher in rural than in metropolitan areas (2.38 per 1,000 enrollees versus 1.90 per 1,000, respectively). This pattern held true in seven of the nine census divisions. Thirty-day post-admission death rates did not show any strong patterns of metropolitan-rural differences.

Table 1. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by age, sex, and race: United States, 1986

Age, sex, and race	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
All persons (1)	26,698,924	96.70	54,210	2.03	5.5	0.011
65-74 years	16,162,594	96.33	33,042	2.04	3.7	0.007
75-84 years	8,020,447	96.96	19,272	2.40	7.8	0.018
85 years or over	2,515,883	98.32	1,896	0.75	13.2	0.009
Men	10,650,991	96.01	17,034	1.60	8.0	0.012
65-74 years	7,056,445	95.90	11,251	1.59	5.2	0.008
75-84 years	2,912,366	96.02	5,329	1.83	12.8	0.023
85 years or over	682,180	97.22	454	0.67	22.0	0.014
Women	16,047,933	97.16	37,176	2.32	4.4	0.010
65-74 years	9,106,149	96.66	21,791	2.39	3.0	0.007
75-84 years	5,108,081	97.51	13,943	2.73	6.0	0.016
85 years or over	1,833,703	98.74	1,442	0.79	10.4	0.008
White	23,574,066	96.62	49,757	2.11	5.5	0.011
65-74 years	14,207,064	96.23	30,022	2.11	3.7	0.007
75-84 years	7,134,499	96.88	17,949	2.52	7.6	0.019
85 years or over	2,232,503	98.26	1,786	0.80	13.4	0.010
Men	9,391,016	95.94	15,936	1.70	7.8	0.013
65-74 years	6,216,472	95.83	10,448	1.68	4.9	0.008
75-84 years	2,573,989	95.94	5,055	1.96	12.5	0.024
85 years or over	600,555	97.12	433	0.72	23.1	0.016
Women	14,183,050	97.07	33,821	2.38	4.4	0.010
65-74 years	7,990,592	96.55	19,574	2.45	3.1	0.007
75-84 years	4,560,510	97.42	12,894	2.83	5.7	0.016
85 years or over	1,631,948	98.69	1,353	0.83	10.3	0.008
Black	1,991,943	97.86	2,416	1.21	6.2	0.007
65-74 years	1,213,014	97.54	1,628	1.34	4.3	0.005
75-84 years	583,429	98.11	715	1.23	11.2	0.013
85 years or over	195,500	99.11	73	0.37	0.0	0.000
Men	792,788	97.49	451	0.57	11.1	0.006
65-74 years	519,305	97.28	336	0.65	8.9	0.005
75-84 years	215,401	97.67	101	0.47	19.8	0.009
85 years or over	58,082	98.74	14	0.24	0.0	0.000
Women	1,199,155	98.10	1,965	1.64	5.1	0.008
65-74 years	693,709	97.74	1,292	1.86	3.1	0.005
75-84 years	368,028	98.37	614	1.67	9.8	0.016
85 years or over	137,418	99.26	59	0.43	0.0	0.000

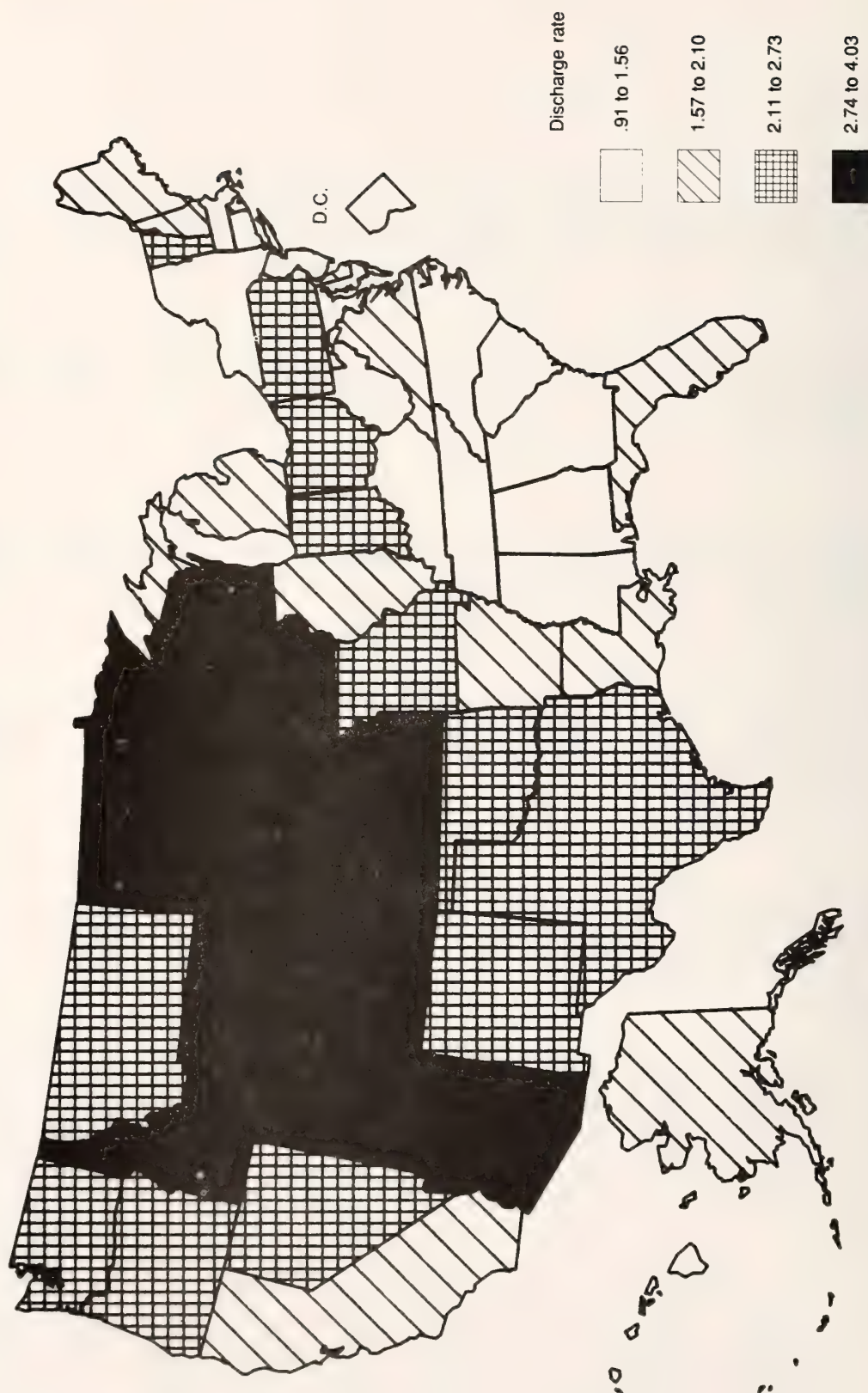
(1) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

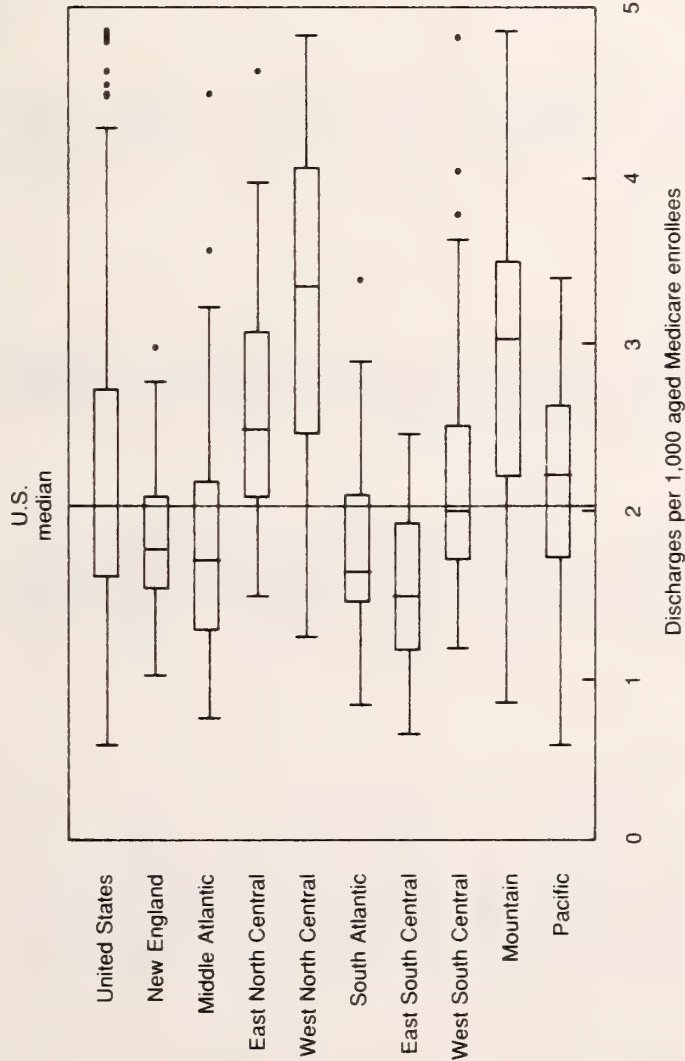


**Figure 1. Total knee replacement: Short-stay hospital discharges per 1,000 aged Medicare enrollees, by State: 1986**



NOTE: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations are included.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Total knee replacement: Short-stay hospital discharges per 1,000 aged Medicare enrollees for rural and metropolitan statistical areas, by division: United States, 1986



Outliers for discharges per 1,000 enrollees			
Area	Rural or metropolitan statistical area	Rate	
United States	Dubuque, IA	4.46	
	Sharon, PA	4.47	
	Rural counties, UT	4.53	
	Green Bay, WI	4.61	
	Waterloo, IA	4.79	
	Amarillo, TX	4.81	
	Iowa City, IA	4.83	
New England	Greeley, CO	4.86	
	Rural counties, NH	2.97	
Middle Atlantic	Beaver County, PA	3.53	
	Sharon, PA	4.47	
East North Central	Green Bay, WI	4.61	
South Atlantic	Fort Myers, FL	3.36	
West South Central	Lubbock, TX	3.76	
	Victoria, TX	4.07	
	Amarillo, TX	4.81	

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	54,210	2.03	5.5	0.011
Metropolitan	19,363,284	95.80	36,828	1.90-	5.6	0.010
Rural	7,335,640	99.16	17,382	2.38+	5.4	0.012
Northeast	6,276,897	98.04	9,629	1.53-	5.9	0.009
Metropolitan	5,564,648	97.84	8,168	1.46-	5.8	0.008
Rural	712,249	99.69	1,461	2.06	6.4	0.012
New England	1,569,313	96.20	2,605	1.66-	3.6	0.006
Metropolitan	1,342,886	95.66	2,112	1.57-	3.9	0.006
Rural	226,427	99.53	493	2.19	2.1	0.004
Maine	153,209	99.88	311	2.04	3.4	0.006
Metropolitan	82,345	99.89	164	1.99	0.0	0.000
Rural	70,864	99.87	147	2.10	8.3	0.014
New Hampshire	114,752	98.98	229	2.00	12.7	0.026
Metropolitan	74,135	98.55	109	1.47-	26.6	0.040
Rural	40,617	99.77	120	2.97	0.0	0.000
Vermont	62,781	99.82	140	2.24	0.0	0.000
Metropolitan	10,422	99.91	16	1.53	0.0	0.000
Rural	52,359	99.80	124	2.39	0.0	0.000
Massachusetts	709,478	93.75	1,105	1.56-	3.3	0.005
Metropolitan	659,025	93.40	1,027	1.56-	3.5	0.006
Rural	50,453	98.58	78	1.55	0.0	0.000
Rhode Island	132,332	97.59	249	1.87	3.4	0.007
Metropolitan	132,332	97.59	249	1.87	3.4	0.007
Rural	0	0.00	0	0.00	0.0	0.000
Connecticut	396,761	97.56	571	1.44-	1.7	0.002-
Metropolitan	384,627	97.50	547	1.42-	1.7	0.002-
Rural	12,134	99.66	24	1.99	0.0	0.000
Middle Atlantic	4,707,584	98.68	7,024	1.49-	6.7	0.010
Metropolitan	4,221,762	98.55	6,056	1.43-	6.4	0.009
Rural	485,822	99.76	968	1.99	8.7	0.016
New York	2,143,249	98.98	2,320	1.08-	5.0	0.005-
Metropolitan	1,922,371	98.89	1,966	1.02-	4.3	0.004-
Rural	220,878	99.75	354	1.61-	8.6	0.013

See notes at end of table.



Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Jersey	916,155	97.84	1,060	1.15-	6.4	0.007
Metropolitan	916,155	97.84	1,060	1.15-	6.4	0.007
Rural	0	0.00	0	0.00	0.0	0.000
Pennsylvania	1,648,180	98.75	3,644	2.19+	8.0	0.017
Metropolitan	1,383,236	98.56	3,030	2.17	7.9	0.017
Rural	264,944	99.78	614	2.31	8.7	0.019
North Central	6,901,975	96.39	17,838	2.59+	4.4	0.011
Metropolitan	4,398,761	95.22	10,215	2.32+	4.7	0.010
Rural	2,503,214	98.51	7,623	3.08+	3.9	0.011
East North Central	4,745,430	97.76	10,875	2.29+	4.7	0.010
Metropolitan	3,453,558	97.13	7,484	2.16+	4.7	0.010
Rural	1,291,872	99.47	3,391	2.64+	4.8	0.011
Ohio	1,263,869	99.46	3,132	2.47+	5.2	0.012
Metropolitan	987,528	99.60	2,470	2.49+	4.8	0.012
Rural	276,341	98.95	662	2.41+	6.4	0.014
Indiana	623,062	97.86	1,385	2.22	7.6	0.016
Metropolitan	399,457	97.01	841	2.10	8.5	0.017
Rural	223,605	99.41	544	2.44	6.0	0.013
Illinois	1,265,011	95.90	2,471	1.95	5.0	0.009
Metropolitan	952,934	94.73	1,738	1.82-	5.9	0.010
Rural	312,077	99.68	733	2.36	2.9	0.006
Michigan	982,444	96.86	2,024	2.06	1.5-	0.003-
Metropolitan	744,347	96.06	1,395	1.87	1.4-	0.002-
Rural	238,097	99.44	629	2.66+	1.8	0.004
Wisconsin	611,044	99.60	1,863	3.07+	5.2	0.014
Metropolitan	369,292	99.43	1,040	2.82+	4.0	0.010
Rural	241,752	99.86	823	3.45+	6.7	0.021
West North Central	2,156,545	93.50	6,963	3.26+	3.8	0.012
Metropolitan	945,203	88.82	2,731	2.89+	4.6	0.012
Rural	1,211,342	97.51	4,232	3.55+	3.2	0.010
Minnesota	397,258	77.30	1,330	3.41+	1.5-	0.005
Metropolitan	187,915	67.07	551	2.97+	3.3	0.009
Rural	209,343	89.55	779	3.80+	0.0	0.000

See notes at end of table.

Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Iowa						
Metropolitan	404,057	99.37	1,608	4.03+	6.4	0.024
Rural	136,818	98.24	518	3.80+	7.9	0.028
	267,239	99.96	1,090	4.14+	5.7	0.022
Missouri						
Metropolitan	655,875	98.17	1,536	2.34+	6.4	0.015
Rural	383,255	96.99	927	2.40+	6.2	0.014
	272,620	99.88	609	2.25	6.6	0.014
North Dakota						
Metropolitan	85,433	98.28	279	3.31+	3.7	0.012
Rural	22,964	98.14	78	3.43	0.0	0.000
	62,469	98.34	201	3.27+	5.0	0.017
South Dakota						
Metropolitan	96,216	99.59	339	3.60+	0.0	0.000
Rural	20,427	99.92	72	3.57	0.0	0.000
	75,789	99.51	267	3.60+	0.0	0.000
Nebraska						
Metropolitan	209,910	98.52	767	3.70+	2.7	0.009
Rural	70,076	95.86	216	3.09+	4.3	0.013
	139,834	99.91	551	4.02+	2.0	0.007
Kansas						
Metropolitan	307,796	95.82	1,104	3.62+	1.0-	0.003
Rural	123,748	93.24	369	2.99+	0.0	0.000
	184,048	97.63	735	4.04+	1.5-	0.005
South						
Metropolitan	8,980,101	97.94	16,310	1.81-	6.7	0.012
Rural	5,757,016	96.87	10,610	1.83-	6.4	0.012
	3,223,085	99.91	5,700	1.77-	7.1	0.012
South Atlantic						
Metropolitan	4,668,855	96.31	8,299	1.77-	6.3	0.011
Rural	3,313,125	94.94	6,065	1.82-	5.8	0.011
	1,355,730	99.84	2,234	1.64-	7.7	0.012
Delaware						
Metropolitan	70,251	99.94	120	1.71	8.0	0.015
Rural	44,355	99.95	90	2.03	11.0	0.022
	25,896	99.94	30	1.16-	0.0	0.000
Maryland						
Metropolitan	436,606	99.49	660	1.51-	7.1	0.011
Rural	395,091	99.44	616	1.55-	6.1	0.010
	41,515	99.95	44	1.06-	19.3	0.025
District of Col.						
Metropolitan	66,196	99.75	74	1.12-	0.0	0.000
Rural	66,196	99.75	74	1.12-	0.0	0.000
	0	0.00	0	0.00	0.0	0.000

See notes at end of table.

Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As Percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Virginia	556,135	99.91	1,070	1.88	8.7	0.017		
Metropolitan	355,193	99.87	733	2.05	9.9	0.022		
Rural	210,942	99.97	337	1.60	5.9	0.009		
West Virginia	244,259	98.98	359	1.46	8.0	0.012		
Metropolitan	90,704	97.39	132	1.44	7.3	0.011		
Rural	153,555	99.95	227	1.48	8.4	0.013		
North Carolina	689,138	99.93	1,077	1.54	4.5	0.007		
Metropolitan	346,905	99.89	522	1.48	0.0	0.000		
Rural	342,233	99.96	555	1.61	9.1	0.014		
South Carolina	329,020	99.44	487	1.46	5.8	0.009		
Metropolitan	186,873	99.05	273	1.44	6.4	0.010		
Rural	142,147	99.95	214	1.49	4.8	0.007		
Georgia	561,716	99.71	863	1.52	8.8	0.014		
Metropolitan	313,319	99.54	477	1.50	9.8	0.015		
Rural	248,397	99.93	386	1.54	7.5	0.012		
Florida	1,705,534	90.97	3,589	2.10	5.3	0.011		
Metropolitan	1,514,489	90.04	3,148	2.07	5.0	0.010		
Rural	191,045	99.17	441	2.32	8.0	0.017		
East South Central	1,726,272	99.80	2,495	1.44	9.0	0.013		
Metropolitan	873,594	99.64	1,332	1.51	11.2	0.018		
Rural	852,678	99.97	1,163	1.36	6.4	0.009		
Kentucky	422,657	99.70	654	1.54	11.7	0.018		
Metropolitan	183,264	99.37	331	1.79	14.0	0.026		
Rural	239,393	99.96	323	1.35	9.1	0.012		
Tennessee	550,327	99.65	728	1.31	9.6	0.012		
Metropolitan	342,097	99.46	457	1.32	11.0	0.014		
Rural	208,320	99.96	271	1.29	7.3	0.009		
Alabama	463,131	99.97	730	1.56	9.7	0.017		
Metropolitan	281,960	99.97	440	1.54	11.9	0.021		
Rural	181,171	99.97	290	1.59	6.2	0.011		
Mississippi	290,157	99.98	383	1.32	2.3	0.003		
Metropolitan	66,363	99.96	104	1.56	0.0	0.000		
Rural	223,794	99.98	279	1.25	3.1	0.004		

See notes at end of table.



Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
West South Central						
Metropolitan	2,584,974	99.74	5,516	2.13	6.1	0.012
Rural	1,570,297	99.59	3,213	2.04	5.5	0.011
	1,014,677	99.97	2,303	2.28+	7.0	0.014
Arkansas						
Metropolitan	321,739	99.96	517	1.61-	7.6	0.012
Rural	100,966	99.98	143	1.41-	0.0	0.000
	220,773	99.95	374	1.70	10.9	0.019
Louisiana						
Metropolitan	415,968	99.98	823	1.99	7.0	0.014
Rural	268,137	99.98	545	2.03	8.8	0.018
	147,831	99.99	278	1.91	3.5	0.006
Oklahoma						
Metropolitan	378,716	99.02	846	2.23	3.6	0.007
Rural	180,038	98.00	374	2.07	2.6	0.005
	198,678	99.96	472	2.38	4.4	0.010
Texas						
Metropolitan	1,468,551	99.81	3,330	2.26+	6.3	0.013
Rural	1,021,156	99.73	2,151	2.10	5.6	0.011
	447,395	99.97	1,179	2.64+	7.6	0.017
West						
Metropolitan	4,539,951	93.08	10,433	2.32+	5.3	0.012
Rural	3,642,859	91.96	7,835	2.16+	5.3	0.011
	897,092	97.88	2,598	2.94+	5.4	0.015
Mountain						
Metropolitan	1,200,638	94.36	3,697	3.09+	5.2	0.015
Rural	720,893	92.10	2,137	2.96+	4.7	0.014
	479,745	97.98	1,560	3.29+	5.9	0.018
Montana						
Metropolitan	97,248	99.90	247	2.57	4.5	0.011
Rural	21,173	99.90	65	3.08	0.0	0.000
	76,075	99.91	182	2.43	6.1	0.014
Idaho						
Metropolitan	109,822	99.77	420	3.86+	8.0	0.030
Rural	18,471	99.90	62	3.37	14.9	0.057
	91,351	99.74	358	3.96+	6.5	0.023
Wyoming						
Metropolitan	42,408	99.91	134	3.19+	0.0	0.000
Rural	12,265	99.93	31	2.54	0.0	0.000
	30,143	99.89	103	3.46+	0.0	0.000
Colorado						
Metropolitan	266,663	94.73	789	2.98+	6.4	0.019
Rural	201,737	95.23	598	2.98+	8.1	0.024
	64,926	93.22	191	2.99+	0.0	0.000

See notes at end of table.

Table 2. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
New Mexico	125,371	92.49	326	2.62+	6.6	0.016
Metropolitan	51,612	85.86	99	1.92	0.0	0.000
Rural	73,759	97.76	227	3.11+	10.1	0.030
Arizona	348,748	91.33	1,079	3.09+	3.8	0.012
Metropolitan	257,931	89.11	775	2.99+	5.1	0.016
Rural	90,817	98.31	304	3.39+	0.0	0.000
Utah	128,579	99.92	496	3.86+	7.3	0.024
Metropolitan	93,319	99.94	337	3.60+	0.0	0.000
Rural	35,260	99.88	159	4.53+	24.7	0.093
Nevada	81,799	86.15	206	2.53	0.0	0.000
Metropolitan	64,385	84.73	170	2.65	0.0	0.000
Rural	17,414	91.83	36	2.09	0.0	0.000
Pacific	3,339,313	92.62	6,736	2.03	5.3	0.010
Metropolitan	2,921,966	91.93	5,698	1.96	5.4	0.010
Rural	417,347	97.77	1,038	2.53+	4.6	0.010
Washington	461,706	92.41	1,250	2.73+	3.3	0.008
Metropolitan	346,977	90.86	893	2.59+	3.3	0.008
Rural	114,729	97.42	357	3.16+	3.2	0.009
Oregon	303,778	86.84	646	2.15	5.1	0.009
Metropolitan	181,677	80.38	352	1.96	5.5	0.011
Rural	122,101	98.65	294	2.44	4.5	0.009
California	2,477,248	93.71	4,736	1.92	6.0	0.011
Metropolitan	2,330,007	93.36	4,385	1.89-	5.9	0.011
Rural	147,241	99.57	351	2.41	6.6	0.015
Alaska	16,348	99.78	33	2.05	0.0	0.000
Metropolitan	5,625	99.75	9	1.59	0.0	0.000
Rural	10,723	99.80	24	2.30	0.0	0.000
Hawaii	80,233	83.64	71	0.91-	0.0	0.000
Metropolitan	57,680	83.31	59	1.05-	0.0	0.000
Rural	22,553	84.47	12	0.56-	0.0	0.000

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
United States	26,698,924	96.70	54,210	2.03	5.5	0.011
Northeast	6,276,897	98.04	9,629	1.53-	5.9	0.009
New England	1,569,313	96.20	2,605	1.66-	3.6	0.006
Maine	153,209	99.88	311	2.04	3.4	0.006
Bangor, ME	16,035	99.87	35	2.19	0.0	0.000
Lewiston-Auburn, ME	13,464	99.93	37	2.75	0.0	0.000
Portland, ME	52,846	99.89	92	1.74	0.0	0.000
New Hampshire	114,752	98.98	229	2.00	12.7	0.026
Manchester, NH	44,397	97.91	58	1.31-	16.1	0.021
Portsmouth, NH	29,738	99.52	51	1.72	39.6	0.068
Vermont	62,781	99.82	140	2.24	0.0	0.000
Burlington, VT	10,422	99.91	16	1.53	0.0	0.000
Massachusetts	709,478	93.75	1,105	1.56-	3.3	0.005
Boston, MA	429,794	95.67	648	1.51-	5.4	0.008
New Bedford, MA	65,540	98.67	92	1.40-	0.0	0.000
Pittsfield, MA	20,281	91.00	20	0.99-	0.0	0.000
Springfield, MA	72,225	92.57	140	1.94	0.0	0.000
Worcester, MA	71,185	79.42	127	1.79	0.0	0.000
Rhode Island	132,332	97.59	249	1.87	3.4	0.007
Providence, RI	132,332	97.59	249	1.87	3.4	0.007
Connecticut	396,761	97.56	571	1.44-	1.7	0.002
Bridgeport, CT	96,911	96.63	115	1.19-	0.0	0.000
Hartford, CT	157,139	99.16	265	1.69	3.6	0.006
New Haven, CT	102,964	95.31	110	1.07-	0.0	0.000
New London, CT	27,613	99.70	57	2.07	0.0	0.000

See notes at end of table.



Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Middle Atlantic	4,707,584	98.68	7,024	1.49-	6.7	0.010
New York	2,143,249	98.98	2,320	1.08-	5.0	0.005
Albany, NY	115,122	98.78	170	1.47-	6.3	0.008
Binghamton, NY	35,576	99.96	89	2.50	0.0	0.000
Buffalo, NY	134,451	98.66	179	1.32-	5.6	0.007
Elmira, NY	13,699	99.94	28	2.05	0.0	0.000
Glens Falls, NY	15,222	99.63	20	1.31	0.0	0.000
Nassau-Suffolk, NY	297,143	99.88	216	0.73-	13.5	0.010
New York, NY	997,473	99.58	816	0.82-	2.1	0.002
Niagara Falls, NY	30,841	99.69	45	1.45	0.0	0.000
Orange County, NY	30,488	99.89	32	1.04-	0.0	0.000
Poughkeepsie, NY	27,864	98.47	35	1.26	22.0	0.035
Rochester, NY	102,542	98.80	171	1.68	5.7	0.009
Syracuse, NY	75,217	99.92	112	1.49	0.0	0.000
Utica-Rome, NY	46,733	99.90	53	1.14-	0.0	0.000
New Jersey	916,155	97.84	1,060	1.15-	6.4	0.007
Atlantic City, NJ	46,406	97.93	63	1.35-	0.0	0.000
Bergen-Passaic, NJ	171,246	99.45	200	1.16-	0.0	0.000
Jersey City, NJ	64,069	99.25	46	0.71-	0.0	0.000
Middlesex, NJ	91,009	94.70	113	1.24-	0.0	0.000
Monmouth-Ocean, NJ	154,643	99.57	158	1.01-	23.4	0.025
Newark, NJ	211,511	99.40	195	0.92-	10.3	0.009
Trenton, NJ	38,499	97.14	52	1.34	0.0	0.000
Vineland, NJ	16,382	96.17	28	1.70	0.0	0.000
Pennsylvania	1,648,180	98.75	3,644	2.19+	8.0	0.017
Allentown, PA-NJ	94,668	99.09	205	2.15	10.0	0.021
Altoona, PA	20,692	99.99	38	1.83	26.2	0.047
Beaver County, PA	27,562	99.95	98	3.53+	18.8	0.077
Erie, PA	35,244	99.92	98	2.77	0.0	0.000
Harrisburg, PA	72,929	99.95	161	2.20	18.6	0.041
Johnstown, PA	40,260	99.97	83	2.05	0.0	0.000
Lancaster, PA	48,045	99.93	104	2.17	0.0	0.000
Philadelphia PA-NJ	569,054	95.81	1,092	1.91	7.5	0.015
Pittsburgh, PA	323,494	99.06	2,705	2.16	4.5	0.009
Reading, PA	48,476	99.88	156	3.20+	0.0	0.000
Scranton, PA	122,888	99.95	244	1.94	13.0	0.023
Sharon, PA	19,009	99.97	85	4.47+	23.1	0.110
State College, PA	10,032	99.97	21	2.09	0.0	0.000
Williamsport, PA	16,877	99.98	39	2.31	0.0	0.000
York, PA	48,541	99.96	87	1.79	0.0	0.000

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
North Central	6,901,975	96.39	17,838	2.59+	4.4	0.011
East North Central	4,745,430	97.76	10,875	2.29+	4.7	0.010
Ohio	1,263,869	99.46	3,132	2.47+	5.2	0.012
Akron, OH	75,615	99.90	186	2.45	5.5	0.013
Canton, OH	51,895	99.97	151	2.91	13.6	0.039
Cincinnati, OH-KY-IN	159,407	99.96	286	1.78	3.1	0.006
Cleveland, OH	242,585	99.71	575	2.36	3.2	0.008
Columbus, OH	121,377	99.73	324	2.66+	3.3	0.008
Dayton, OH	103,547	99.95	213	2.05	0.0	0.000
Hamilton, OH	26,009	99.95	64	2.45	14.9	0.038
Lima, OH	19,579	99.97	72	3.68	0.0	0.000
Lorain-Elyria, OH	27,340	99.85	70	2.56	0.0	0.000
Mansfield, OH	15,230	99.96	44	2.88	0.0	0.000
Steubenville, OH-WV	21,934	98.57	40	1.81	0.0	0.000
Toledo, OH	70,660	99.95	220	3.09+	4.8	0.014
Youngstown, OH	69,319	99.95	243	3.50+	13.9	0.045
Indiana	623,062	97.86	1,385	2.22	7.6	0.016
Anderson, IN	17,198	99.83	43	2.46	23.1	0.058
Bloomington, IN	7,913	99.87	12	1.51	0.0	0.000
Elkhart-Goshen, IN	15,647	99.92	55	3.52	31.8	0.127
Evansville, IN-KY	34,434	95.72	55	1.59	18.8	0.028
Fort Wayne, IN	37,565	97.77	107	2.84	0.0	0.000
Gary-Hammond, IN	61,160	97.01	117	1.90	0.0	0.000
Indianapolis, IN	118,407	93.81	192	1.62	5.2	0.008
Kokomo, IN	10,842	99.94	27	2.48	0.0	0.000
Lafayette, IN	11,228	99.92	22	1.97	0.0	0.000
Muncie, IN	13,759	99.91	42	3.01	47.6	0.141
South Bend, IN	33,170	99.93	104	3.12	0.0	0.000
Terre Haute, IN	19,585	99.89	32	1.61	34.4	0.048
Illinois	1,265,011	95.90	2,471	1.95	5.0	0.009
Aurora-Elgin, IL	30,946	98.68	97	3.12	11.2	0.031
Bloomington, IL	12,672	99.94	38	3.02	0.0	0.000
Champaign, IL	13,391	99.91	30	2.25	0.0	0.000
Chicago, IL	608,135	92.94	902	1.48-	4.4	0.006
Decatur, IL	15,992	99.97	62	3.88	0.0	0.000
Joliet, IL	28,047	97.18	65	2.30	34.9	0.071
Kankakee, IL	12,020	99.94	39	3.26	0.0	0.000
Lake County, IL	36,099	96.52	67	1.86	0.0	0.000
Peoria, IL	43,549	99.93	75	1.72	0.0	0.000
Rockford, IL	28,351	88.93	73	2.59	0.0	0.000
Springfield, IL	24,799	99.96	52	2.07	0.0	0.000

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Michigan	982,444	96.86	2,024	2.06	1.5-	0.003
Ann Arbor, MI	17,760	95.12	27	1.52	0.0	0.000
Battle Creek, MI	16,831	99.89	31	1.84	0.0	0.000
Benton Harbor, MI	21,618	99.88	53	2.46	18.9	0.048
Detroit, MI	448,826	96.43	657	1.46-	1.5	0.002
Flint, MI	43,084	91.01	101	2.32	0.0	0.000
Grand Rapids, MI	64,091	95.42	182	2.84	0.0	0.000
Jackson, MI	17,046	99.82	51	2.99	0.0	0.000
Kalamazoo, MI	21,512	99.85	54	2.50	0.0	0.000
Lansing, MI	32,460	90.23	54	1.66	0.0	0.000
Muskegon, MI	18,957	98.06	67	3.53	0.0	0.000
Saginaw, MI	42,162	96.18	118	2.78	0.0	0.000
Wisconsin	611,044	99.60	1,863	3.07+	5.2	0.014
Appleton, WI	34,483	99.96	136	3.95+	0.0	0.000
Eau Claire, WI	16,955	99.94	53	3.16	0.0	0.000
Green Bay, WI	19,185	99.97	89	4.61+	0.0	0.000
Janesville, WI	16,529	99.85	58	3.51	0.0	0.000
Kenosha, WI	14,291	99.91	33	2.31	0.0	0.000
LaCrosse, WI	11,858	99.91	30	2.54	0.0	0.000
Madison, WI	30,776	99.74	102	3.34+	9.8	0.032
Milwaukee, WI	166,813	99.21	380	2.27	7.7	0.017
Racine, WI	20,503	99.90	49	2.40	0.0	0.000
Sheboygan, WI	14,461	99.98	38	2.63	0.0	0.000
Wausau, WI	12,945	99.95	42	3.27	0.0	0.000
West North Central	2,156,545	93.50	6,963	3.26+	3.8	0.012
Minnesota	397,258	77.30	1,330	3.41+	1.5-	0.005
Duluth, MN-WI	29,977	76.74	67	2.24	0.0	0.000
Minneapolis, MN-WI	141,769	64.45	411	2.94+	4.3	0.013
Rochester, MN	9,393	99.67	38	4.08	0.0	0.000
St. Cloud, MN	12,248	70.92	40	3.35	0.0	0.000
Iowa	404,057	99.37	1,608	4.03+	6.4	0.024
Cedar Rapids, IA	19,323	99.94	81	4.21+	0.0	0.000
Davenport, IA-IL	44,646	99.94	121	2.71	9.6	0.022
Des Moines, IA	40,067	94.50	113	2.83	19.1	0.047
Dubuque, IA	11,460	99.95	51	4.46+	0.0	0.000
Iowa City, IA	6,240	99.90	30	4.83	0.0	0.000
Sioux City, IA-NE	15,951	99.96	63	3.99+	18.2	0.061
Waterloo, IA	19,521	99.96	93	4.79+	11.9	0.051

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
Missouri	655,875	98.17	1,536	2.34+	6.4	0.015
Columbia, MO	8,560	99.98	19	2.23	0.0	0.000
Joplin, MO	19,275	99.95	41	2.10	0.0	0.000
Kansas City, MO-KS	154,919	95.72	378	2.44	5.6	0.012
St. Joseph, MO	13,630	99.97	29	2.12	0.0	0.000
St. Louis, MO-IL	283,167	97.43	692	2.42+	8.3	0.020
Springfield, MO	27,676	99.94	71	2.56	0.0	0.000
North Dakota	85,433	98.28	279	3.31+	3.7	0.012
Bismarck, ND	8,160	95.13	25	3.07	0.0	0.000
Fargo, ND-MN	14,138	96.57	59	4.25+	0.0	0.000
Grand Forks, ND	5,687	99.95	19	3.38	0.0	0.000
South Dakota	96,216	99.59	339	3.60+	0.0	0.000
Rapid City, SD	7,152	99.89	17	2.39	0.0	0.000
Sioux Falls, SD	13,275	99.93	55	4.21	0.0	0.000
Nebraska	209,910	98.52	767	3.70+	2.7	0.009
Lincoln, NE	20,994	98.50	76	3.64+	0.0	0.000
Omaha, NE-IA	57,609	95.39	174	3.03+	5.3	0.017
Kansas	307,796	95.82	1,104	3.62+	1.0-	0.003
Lawrence, KS	4,965	87.78	6	1.22	0.0	0.000
Topeka, KS	18,983	97.26	58	3.07	0.0	0.000
Wichita, KS	45,844	88.57	172	3.76+	0.0	0.000
South	8,980,101	97.94	16,310	1.81-	6.7	0.012
South Atlantic	4,668,855	96.31	8,299	1.77-	6.3	0.011
Delaware	70,251	99.94	120	1.71	8.0	0.015
Wilmington, DE-NJ-MD	58,114	99.65	118	2.03	8.5	0.018
Maryland	436,606	99.49	660	1.51-	7.1	0.011
Baltimore, MD	244,878	99.90	400	1.62-	7.0	0.012
Cumberland, MD-WV	17,051	99.95	36	2.08	0.0	0.000
Hagerstown, MD	14,522	99.95	21	1.44	0.0	0.000
District of Col.	66,196	99.75	74	1.12-	0.0	0.000
Washington, DC-MD-VA	261,121	99.05	369	1.42-	7.4	0.011

See notes at end of table.



Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1996

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Virginia	566,135	99.91	1,070	1.88	8.7	0.017
Charlottesville, VA	12,020	99.92	17	1.41	0.0	0.000
Danville, VA	15,532	99.99	21	1.34	54.5	0.065
Lynchburg, VA	18,110	99.99	29	1.58	0.0	0.000
Norfolk, VA	102,601	99.96	215	2.08	12.3	0.030
Richmond, VA	85,698	99.98	241	2.79+	3.9	0.011
Roanoke, VA	30,622	99.98	58	1.88	14.0	0.031
West Virginia	244,259	98.98	359	1.46-	8.0	0.012
Charleston, WV	34,215	99.96	52	1.51	0.0	0.000
Huntington, WV-KY-OH	40,891	99.95	35	0.85-	19.6	0.024
Parkersburg, WV-OH	19,888	99.94	50	2.51	0.0	0.000
Wheeling, WV-OH	22,016	82.51	36	1.62	0.0	0.000
North Carolina	689,138	99.93	1,077	1.54-	4.5	0.007
Asheville, NC	24,469	99.92	55	2.24	0.0	0.000
Burlington, NC	14,505	99.99	12	0.81-	0.0	0.000
Charlotte, NC	109,337	99.79	177	1.59	0.0	0.000
Fayetteville, NC	13,388	99.98	18	1.32	0.0	0.000
Greensboro, NC	99,387	99.97	131	1.30-	0.0	0.000
Hickory, NC	23,392	99.97	28	1.18	0.0	0.000
Jacksonville, NC	5,134	99.86	10	1.92	0.0	0.000
Raleigh-Durham, NC	56,484	99.86	88	1.54	0.0	0.000
Wilmington, NC	12,634	99.97	19	1.49	0.0	0.000
South Carolina	329,020	99.44	487	1.46-	5.8	0.009
Anderson, SC	16,583	99.70	22	1.30	29.2	0.059
Charleston, SC	34,246	98.90	45	1.30	24.9	0.030
Columbia, SC	35,361	99.98	62	1.73	0.0	0.000
Florence, SC	11,195	99.96	12	1.05	0.0	0.000
Greenville, SC	65,893	98.01	107	1.59	0.0	0.000
Georgia	561,716	99.71	863	1.52-	8.8	0.014
Albany, GA	9,292	99.92	24	2.56	0.0	0.000
Athens, GA	13,510	99.96	20	1.46	39.7	0.072
Atlanta, GA	189,539	99.27	281	1.46-	10.0	0.015
Augusta, GA-SC	32,938	99.93	27	0.81-	0.0	0.000
Columbus, GA-AL	22,847	99.96	47	2.02	0.0	0.000
Macon, GA	25,929	99.97	43	1.63	23.6	0.037
Savannah, GA	25,338	99.94	46	1.80	0.0	0.000

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-NMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Florida	1,705,534	90.97	3,589	2.10	5.3	0.011
Bradenton, FL	42,906	99.68	86	2.00	0.0	0.000
Daytona Beach, FL	62,616	92.90	156	2.49	0.0	0.000
Fort Lauderdale, FL	181,839	81.09	255	1.37-	11.4	0.015
Fort Myers, FL	61,428	99.65	206	3.36+	0.0	0.000
Fort Pierce, FL	41,198	99.28	90	2.19	13.8	0.028
FT. Walton Beach, FL	10,169	99.88	22	2.18	0.0	0.000
Gainesville, FL	16,758	99.58	48	2.87	0.0	0.000
Jacksonville, FL	80,895	98.22	141	1.74	7.4	0.012
Lakeland, FL	55,495	99.56	125	2.25	0.0	0.000
Melbourne, FL	46,501	99.72	103	2.22	0.0	0.000
Miami-Hialeah, FL	168,502	79.57	220	1.31-	3.6	0.005
Naples, FL	23,433	99.75	52	2.23	0.0	0.000
Ocala, FL	31,367	99.50	54	1.73	0.0	0.000
Orlando, FL	90,604	98.55	182	2.01	5.2	0.012
Panama City, FL	11,817	99.70	18	1.51	0.0	0.000
Pensacola, FL	29,972	99.89	57	1.89	14.8	0.035
Sarasota, FL	77,895	99.81	195	2.50	0.0	0.000
Tallahassee, FL	17,414	97.85	31	1.77	0.0	0.000
Tampa, FL	323,951	87.05	839	2.58+	8.9	0.024
West Palm Beach, FL	139,729	85.22	268	1.90	0.0	0.000
East South Central	1,726,272	99.80	2,495	1.44-	9.0	0.013
Kentucky	422,657	99.70	654	1.54-	11.7	0.018
Lexington, KY	31,008	98.87	53	1.71	33.2	0.063
Louisville, KY-IN	107,485	99.20	218	2.01	8.5	0.017
Owensboro, KY	10,319	99.96	12	1.14	0.0	0.000
Tennessee	550,327	99.65	728	1.31-	9.6	0.012
Chattanooga, TN-GA	50,061	99.97	97	1.91	0.0	0.000
Clarksville, TN-KY	12,541	99.91	29	2.31	0.0	0.000
Jackson, TN	10,064	99.95	10	0.99	0.0	0.000
Johnson City, TN-VA	55,068	99.97	49	0.88-	0.0	0.000
Knoxville, TN	70,970	99.96	94	1.31-	11.0	0.014
Memphis, TN-AR-MS	88,836	98.06	81	0.91-	25.7	0.022
Nashville, TN	92,994	99.96	146	1.55	13.2	0.021

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges			30-day post-admission deaths		
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees		
Alabama	463,131	99.97	730	1.56-	9.7	0.017		
Anniston, AL	13,124	99.97	16	1.20	61.7	0.076		
Birmingham, AL	108,546	99.98	183	1.67	4.8	0.009		
Dothan, AL	12,690	99.94	23	1.79	0.0	0.000		
Florence, AL	16,687	99.97	35	2.08	0.0	0.000		
Gadsden, AL	14,295	99.97	28	1.92	30.1	0.069		
Huntsville, AL	17,137	99.96	11	0.64-	0.0	0.000		
Mobile, AL	50,513	99.96	79	1.55	10.7	0.020		
Montgomery, AL	29,832	99.97	32	1.07-	0.0	0.000		
Tuscaloosa, AL	13,604	99.99	19	1.39	94.2	0.146		
Mississippi	290,157	99.98	383	1.32-	2.3	0.003		
Biloxi-Gulfport, MS	18,079	99.97	39	2.15	0.0	0.000		
Jackson, MS	35,305	99.98	38	1.07-	0.0	0.000		
Pascagoula, MS	8,556	99.88	21	2.44	0.0	0.000		
West South Central	2,584,974	99.74	5,516	2.13	6.1	0.012		
Arkansas	321,739	99.96	517	1.61-	7.6	0.012		
Fayetteville, AR	11,803	99.95	27	2.29	0.0	0.000		
Fort Smith, AR-OK	21,413	99.98	25	1.16	0.0	0.000		
Little Rock, AR	50,966	99.99	75	1.46	0.0	0.000		
Pine Bluff, AR	11,012	99.98	14	1.28	0.0	0.000		
Louisiana	415,968	99.98	823	1.99	7.0	0.014		
Alexandria, LA	13,819	99.96	34	2.48	0.0	0.000		
Baton Rouge, LA	39,583	99.97	72	1.82	13.4	0.026		
Houma-Thibodaux, LA	13,501	100.00	28	2.07	0.0	0.000		
Lafayette, LA	14,620	99.99	30	2.05	0.0	0.000		
Lake Charles, LA	16,436	99.98	25	1.51	49.9	0.063		
Monroe, LA	14,648	99.99	41	2.81	0.0	0.000		
New Orleans, LA	118,708	99.98	259	2.17	10.6	0.025		
Shreveport, LA	36,822	99.98	56	1.53	0.0	0.000		
Oklahoma	378,716	99.02	846	2.23	3.6	0.007		
Enid, OK	8,215	99.94	14	1.70	0.0	0.000		
Lawton, OK	8,221	99.99	23	2.80	52.1	0.127		
Oklahoma City, OK	88,646	97.45	221	2.48	0.0	0.000		
Tulsa, OK	71,032	98.13	112	1.57	0.0	0.000		

See notes at end of table.

Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Texas	1,468,551	99.81	3,330	2.26+	6.3	0.013
Abilene, TX	13,100	99.96	22	1.67	0.0	0.000
Amarillo, TX	19,063	99.97	93	4.81+	0.0	0.000
Austin, TX	47,578	99.95	119	2.51	8.6	0.021
Beaumont, TX	42,323	99.98	85	1.99	12.7	0.023
Brazoria, TX	12,486	99.78	26	2.07	0.0	0.000
Brownsville, TX	20,169	99.86	72	3.61	0.0	0.000
Bryan, TX	6,955	99.96	21	3.03	0.0	0.000
Corpus Christi, TX	28,417	95.56	78	2.73	0.0	0.000
Dallas, TX	172,118	99.95	304	1.75	3.2	0.005
El Paso, TX	37,292	99.94	72	1.95	0.0	0.000
Fort Worth, TX	97,947	99.96	196	1.99	5.1	0.010
Galveston, TX	19,376	99.94	46	2.36	0.0	0.000
Houston, TX	187,992	99.85	363	1.92	5.8	0.010
Killeen-Temple, TX	17,182	99.97	36	2.11	0.0	0.000
Laredo, TX	8,421	99.99	15	1.81	0.0	0.000
Longview, TX	20,547	99.98	36	1.74	0.0	0.000
Lubbock, TX	18,957	99.97	72	3.76+	29.6	0.107
McAllen, TX	27,402	99.82	67	2.48	0.0	0.000
Midland, TX	7,362	99.96	13	1.76	0.0	0.000
Odessa, TX	9,207	99.99	13	1.40	0.0	0.000
San Angelo, TX	11,213	99.99	30	2.65	0.0	0.000
San Antonio, TX	107,989	99.28	204	1.89	13.1	0.028
Sherman-Denison, TX	14,532	99.99	22	1.51	0.0	0.000
Texarkana, TX-AR	15,315	99.99	20	1.30	0.0	0.000
Tyler, TX	18,223	99.98	29	1.58	0.0	0.000
Victoria, TX	6,871	99.97	28	4.07	0.0	0.000
Waco, TX	23,624	99.99	32	1.35	0.0	0.000
Wichita Falls, TX	14,462	99.97	41	2.83	21.7	0.067
West	4,539,951	93.08	10,433	2.32+	5.3	0.012
Mountain	1,200,638	94.36	3,697	3.09+	5.2	0.015
Montana	97,248	99.90	247	2.57	4.5	0.011
Billings, MT	12,097	99.88	47	3.90	0.0	0.000
Great Falls, MT	9,076	99.91	18	2.00	0.0	0.000
Idaho	109,822	99.77	420	3.86+	8.0	0.030
Boise City, ID	18,471	99.90	62	3.37	14.9	0.057
Wyoming	42,408	99.91	134	3.19+	0.0	0.000
Casper, WY	5,379	99.91	10	1.87	0.0	0.000
Cheyenne, WY	6,886	99.96	21	3.05	0.0	0.000

See notes at end of table.



Table 3. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMD enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMD enrollees	Per 1,000 discharges	Per 1,000 non-HMD enrollees
Colorado	266,663	94.73	789	2.98+	6.4	0.019
Boulder-Longmont, CO	15,143	97.96	33	2.20	26.9	0.065
Colorado Springs, CO	24,899	95.03	83	3.34	0.0	0.000
Denver, CO	119,624	94.10	314	2.64+	3.0	0.008
Fort Collins, CO	15,089	99.71	64	4.28+	0.0	0.000
Greeley, CO	11,610	99.62	56	4.86+	0.0	0.000
Pueblo, CO	15,372	94.43	48	3.13	59.9	0.203
New Mexico	125,371	92.49	326	2.62+	6.6	0.016
Albuquerque, NM	33,783	81.01	72	2.12	0.0	0.000
Las Cruces, NM	9,375	99.94	20	2.17	0.0	0.000
Santa Fe, NM	8,454	93.66	7	0.83	0.0	0.000
Arizona	348,748	91.33	1,079	3.09+	3.8	0.012
Phoenix, AZ	187,381	86.74	573	3.04+	6.8	0.022
Tucson, AZ	70,550	96.06	202	2.86+	0.0	0.000
Utah	128,579	99.92	496	3.86+	7.3	0.024
Provo-Orem, UT	16,076	99.93	66	4.10+	0.0	0.000
Salt Lake City, UT	77,243	99.94	271	3.50+	0.0	0.000
Nevada	81,799	86.15	206	2.53	0.0	0.000
Las Vegas, NV	45,252	82.98	131	2.90	0.0	0.000
Reno, NV	19,133	89.17	39	2.06	0.0	0.000
Pacific	3,339,313	92.62	6,736	2.03	5.3	0.010
Washington	461,706	92.41	1,250	2.73+	3.3	0.008
Bellingham, WA	13,629	99.51	38	2.81	0.0	0.000
Bremerton, WA	15,439	96.59	43	2.80	0.0	0.000
Olympia, WA	14,254	90.98	42	2.97	0.0	0.000
Richland, WA	12,559	99.85	32	2.55	0.0	0.000
Seattle, WA	159,828	86.57	379	2.39	2.4	0.006
Spokane, WA	41,237	94.51	123	3.01	0.0	0.000
Tacoma, WA	50,245	97.24	116	2.33	19.2	0.041
Vancouver, WA	17,048	80.32	44	2.58	0.0	0.000
Yakima, WA	22,738	99.74	76	3.37	0.0	0.000
Oregon	303,778	86.84	646	2.15	5.1	0.009
Eugene, OR	28,947	88.67	44	1.53	0.0	0.000
Medford, OR	20,326	99.78	54	2.69	0.0	0.000
Portland, OR	99,155	72.79	180	1.83	5.0	0.010
Salem, OR	33,249	90.39	74	2.24	13.7	0.030

See notes at end of table.

Table 5. Total knee replacement: Enrollment, short-stay hospital discharges, and post-admission deaths for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986

Area of residence	Non-HMO enrollment		Discharges		30-day post-admission deaths	
	Number	As percent of all enrollees	Number	Per 1,000 non-HMO enrollees	Per 1,000 discharges	Per 1,000 non-HMO enrollees
California	2,477,248	93.71	4,736	1.92	6.0	0.011
Anaheim-Santa Ana, CA	167,171	89.39	347	2.08	5.6	0.011
Bakersfield, CA	44,969	99.76	100	2.23	9.5	0.024
Chico, CA	27,102	99.09	72	2.68	0.0	0.000
Fresno, CA	58,425	99.90	100	1.73	19.8	0.036
Los Angeles, CA	677,939	91.40	1,160	1.73-	7.2	0.013
Merced, CA	13,462	99.86	20	1.50	0.0	0.000
Modesto, CA	33,619	98.80	89	2.65	0.0	0.000
Oakland, CA	188,258	99.08	332	1.77	5.3	0.010
Oxnard-Ventura, CA	49,488	93.74	92	1.86	0.0	0.000
Redding, CA	17,796	99.73	52	2.94	20.8	0.063
Riverside, CA	203,246	90.92	511	2.52+	6.2	0.015
Sacramento, CA	120,273	91.81	198	1.66	15.2	0.026
Salinas, CA	29,131	99.86	52	1.81	0.0	0.000
San Diego, CA	205,402	91.35	421	2.06	2.3	0.004
San Francisco, CA	163,753	89.02	243	1.50-	8.3	0.012
San Jose, CA	105,258	99.50	148	1.41-	0.0	0.000
Santa Barbara, CA	38,021	99.70	115	3.05	0.0	0.000
Santa Cruz, CA	24,640	99.77	40	1.64	0.0	0.000
Santa Rosa, CA	44,775	99.49	96	2.14	0.0	0.000
Stockton, CA	40,855	91.54	63	1.57	0.0	0.000
Vallejo, CA	35,778	98.59	50	1.41	0.0	0.000
Visalia, CA	28,811	99.91	63	2.20	14.8	0.037
Yuba City, CA	11,835	99.35	21	1.79	0.0	0.000
Alaska	16,348	99.78	33	2.05	0.0	0.000
Anchorage, AK	5,625	99.75	9	1.59	0.0	0.000
Hawaii	80,233	83.64	71	0.91-	0.0	0.000
Honolulu, HI	57,680	83.31	59	1.05-	0.0	0.000

NOTES: Only aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations (HMOs) are included. All rates are indirectly standardized for age and sex. A (+) or (-) indicates the rate is significantly greater or less than the U.S. rate (p<.01).

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

# Appendix A. Statistical note

## Reliability of estimates and testing for significant differences

### Introduction

In this compilation of data, diagnostic- and procedure-specific discharge and mortality rates are shown, a large number of which are for relatively small areas. As a result, the numbers of discharges, deaths, and enrollees used in the numerators and denominators to calculate the rates can be quite small. Small numbers in the numerator, denominator, or both increase the likelihood that unusually high or low rates will occur merely by chance.

The observed rates are true rates in the sense that they are based on 100 percent of the 1986 enrollees and discharges. That is, they are not estimated from a sample and, thus, are not subject to sampling error in the usual sense. Nevertheless, the rates are random variables, and each observed value is one of many possible values that might have occurred for reasons that can only be attributed to chance. Thus, an unusually high 1986 death rate, for example, may be a chance aberration and not indicative of what the rate in that area would be over a period of years. Variation over time will be discussed later in this section.

Two aids are provided to assist the user in identifying rates that may deviate to an important degree from the norm, with small probability that the deviation results from

chance. The first aid is a presentation of approximate standard error formulas and tables that will allow users to assess the reliability of any given rate. The second aid involves testing each area rate against the U.S. rate and annotating area rates that are significantly different. With both aids, rates are treated as though they are estimates based on a sample of enrollees or discharges.

### Standard error tables and formulas

Standard errors for 30-day post-admission deaths per 1,000 discharges, 30-day post-admission deaths per 1,000 enrollees, and total deaths per 1,000 enrollees are shown in Table A-1. The standard error is a function of both the magnitude of the rate and the magnitude of the number of discharges or enrollees in the base of the rate. For a given base, small rates will have small absolute standard errors, but larger relative standard errors, than large rates. The absolute standard error is shown in Table A-1. The relative standard error is obtained by dividing the absolute standard error by the rate. The degree of reliability required of an estimate depends on how the estimate is used. However, we recommend caution in using estimates with relative standard errors of more than 25 or 30 percent.

Linear interpolation should provide a reasonable approximation of standard errors for rates and/or bases not shown in Table A-1. If more accuracy is desired, the

following formula can be used to calculate the absolute standard error:

$$SE = \sqrt{R(1,000 - R)/N},$$

where  $R$  is the rate for which the standard error is desired and  $N$  is the number of discharges or enrollees in the base of the rate.

In Table A-2, approximate standard errors for discharges per 1,000 enrollees are given. The table can be read and interpreted similarly to Table A-1. However, to reduce the number of tables and different formulas needed, the formula used to calculate these standard errors contains two approximations, which means that applying them to specific estimates also results in approximate standard errors. The formula and the approximations are described here. Hansen, Hurwitz, and Madow (1953) give a detailed explanation of these approximations.

$$SE = \sqrt{R^2(0.4502 + Q)/PN},$$

where  $R$  = the rate for which the standard error is desired; 0.4502 = the coefficient of variation (CV) of discharges for persons with one or more discharges (the first approximation);  $N$  = the number of enrollees in the base of the rate;  $P$  = the proportion of enrollees with at least one discharge (the second approximation); and  $Q = 1 - P$ .

The CV was calculated for all 1986 discharges in the United States regardless of diagnosis or procedure. This is an approximation because different conditions and/or areas are likely to be associated with



different patterns of multiple hospitalizations and are, thus, likely to have different CVs. However, to keep the table of standard errors simple, it was assumed that each condition would have a distribution of hospitalizations similar to the distribution for all conditions.  $P$  is an approximation of the proportion of enrollees with at least one discharge and is derived by estimating the number of persons with at least one discharge by dividing the number of discharges by the average number of discharges per enrollee (1.55) for all conditions and then dividing this result by the number of enrollees in the base of the rate.  $P$  is an approximation because different conditions and areas are likely to have average numbers of discharges per enrollee different from 1.55.

The extent of error introduced by these approximations is unknown. The user is therefore cautioned to treat the formula and tabled values as approximations of the standard errors for specific rates.

### Standard errors and time-dependent variation

Standard errors are usually interpreted as measures of sampling error. However, when dealing with 100-percent data, as in this compilation, the standard error can be viewed as a measure of the variation in the many possible values the rates might have taken under circumstances that can only be attributed to chance. To the extent that the rates are generated in a temporally stable environment, the standard error could also be used as a measure of the expected variation in rates from year to year. However, some temporal sources of variation are not reflected in the standard error when

it is based on only 1 year of data. Periodic influenza epidemics are an example. Also, the standard error, as calculated here, will not adequately reflect variations resulting from trends, such as a declining death rate.

### Comparison of area rates with U.S. rates

Area rates shown in Tables 2 and 3 for each of the 14 procedures have been annotated to show when the difference between the area rate and the U.S. rate is significant at the 0.01 level. (A significance level of .01 means that, if samples of the same size are repeatedly drawn from two populations with identical rates and the significance test for each sample is performed, then a significant difference will be incorrectly declared in 1 out of every 100 samples.) Rates with a minus sign are significantly lower than the U.S. rate, and rates with a plus sign are significantly higher than the U.S. rate. The intent of this annotation is to highlight for the user rates that may be unusually high or low while taking into account the element of chance. Rates without a sign could also be unusually high or low, but the lack of a sign is intended to serve as a warning of a high standard error.

For each comparison, a normal theory test for the difference between two rates with a critical value of 2.575 was used. This approach means that, for every 100 comparisons made, one erroneously declared significant difference can be expected (a type I error). Given the thousands of comparisons made in this data compilation, one can expect that many such errors have been made. On the other hand, more conservative alternative approaches, such as

the Bonferroni multiple comparison test, would place greater overall control on the type I error at the expense of decreasing the power to detect differences that may, in fact, be real (a type II error). The compromise between committing the two types of errors has been to use a significance level of .01 instead of the usual .05. It was assumed that this would be appropriate for its intended purpose as a screening device to identify rates that may be unusually high or low for reasons other than chance variation.

The following formula was used to carry out the tests and may be employed by users for any other comparisons between two rates:

$$z = (R_1 - R_2) / \sqrt{SE_1^2 + SE_2^2},$$

where  $R_1$  and  $R_2$  are the two rates being compared, and  $SE_1$  and  $SE_2$  are their respective standard errors, as defined earlier in this section. If  $z$  exceeded 2.575 (or was less than -2.575), then the rate being tested was annotated. This formula assumes that any covariance resulting from the fact that metropolitan statistical areas (MSAs) and rural areas are subareas of the United States is negligible.

### Description of boxplots

The boxplots presented in this report are a graphical representation of the distribution of rates across MSAs and rural areas. Boxplots enable a reader to readily grasp the geographic variation in the rate being examined, to compare the median and spread of a given rate across census divisions, and to identify outlying areas. Each graph has 10 boxplots, 1 for the United States (excluding outlying territories) and 1 for each of the 9 census divisions.



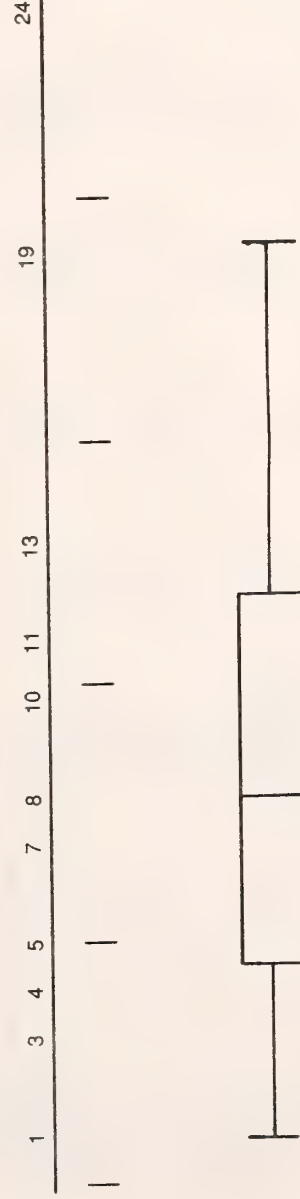
The U.S. boxplot is derived from the data for 365 MSAs and rural areas. The number of areas comprising the division boxplots is shown in Table A-4.

The length of the rectangular (or box) portion of the boxplot is approximately the interquartile range. It extends from about the 25th percentile (the first quartile) to the 75th percentile (the third quartile). (The actual calculations made for boxplots are similar to, but not identical to, the calculations made to find the quartiles. Thus, the terms quartile and interquartile range are only approximate. Hoaglin, Mosteller, and Tukey (1983) was used extensively as a reference in creating and interpreting the boxplots for this data compilation.) The vertical line that is usually located near the center of the box is the median value. The horizontal lines extending from each end of the rectangle are called "whiskers." Some notation will be useful to show how their length is determined. Let  $d$

equal the third quartile minus the first quartile, i.e., the length of the box. Then the left whisker extends from the left end of the box to the last point that is not less than the first quartile minus 1.5 times  $d$ . The right whisker extends from the right side of the box to the last point that does not exceed the third quartile plus 1.5 times  $d$ . Short vertical lines simply emphasize the terminal points of both whiskers. Values falling beyond the whiskers are shown as individual points. In Figure A-1, 11 hypothetical data points (1, 3, 4, 5, 7, 8, 10, 11, 13, 19, 24), ranging from 1 to 24, are used to illustrate these calculations.

The median is at location  $(11 + 1)/2 = 6$ , or the value of the sixth observation from either end. This value is 8. The location of the ends of the box are calculated from the median location as follows:  $(6 + 1)/2 = 3.5$  observations in from either end. Thus, the left end of the box is in the middle of the third and fourth values, which, with

Figure A-1. Example of boxplots



interpolation, is found to be 4.5. The right end of the box is located 3.5 observations from the upper extreme, which falls at the value 12. To find the length of the whiskers, first calculate  $1.5d$ , i.e.,  $1.5(12 - 4.5) = 11.25$ . Because  $4.5 - 11.25$  is negative, the left whisker extends to the smallest value, which is 1. For the right side,  $12 + 11.25 = 23.25$ . The last observation not exceeding 23.25 has a value of 19, which is where the right whisker ends. The highest value, 24, is shown as a point beyond the right whisker.

There are four characteristics of the distribution of MSA and rural rates that are readily observed from boxplots: the median, the location and spread of the central 50 percent of observations, the overall spread as indicated by the length of the whiskers and the remoteness of the outlying points, and the symmetry of the distribution as indicated by the location of the median within the box, the relative lengths of the

left and right whiskers, and the left and right balance of outlying points.

An understanding of the outlying observations may be aided by considering the number of expected outlying points in a normal distribution. For large, normally distributed samples, about 0.35 percent of the observations would lie outside each of the whiskers, that is, 2.7 standard deviations from the mean. This percent would be somewhat larger for the smaller samples used in this data compilation (Hoaglin, Mosteller, and Tukey, 1983). For example, if the 365 areas in the U.S. boxplots were from a normal distribution, one would expect, on average, about 0.4 percent, or 1.5 observations beyond each end of the whiskers. For New England, with 21 areas, the percent would be about 2.6, or an average of 0.55 observations on either side. It should be noted, however, that no attempt has been made to determine whether any of the actual distributions appear to be normal. Thus, outlying points that exceed expected values for normal distributions may not be true outliers for the actual distributions.

**Table A-1. Absolute standard errors for deaths per 1,000 discharges or per 1,000 enrollees**

Discharges or enrollees in base	Deaths per 1,000 discharges or per 1,000 enrollees									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
	Standard error									
1,000					0.500	0.548	0.591	0.632	0.671	0.999
2,000				0.365	0.408	0.447	0.483	0.516	0.547	0.707
3,000			0.274	0.316	0.353	0.387	0.418	0.447	0.474	0.577
4,000			0.245	0.283	0.316	0.346	0.374	0.400	0.424	0.500
5,000		0.200	0.224	0.258	0.289	0.316	0.341	0.365	0.387	0.408
6,000		0.183	0.207	0.239	0.267	0.293	0.316	0.338	0.358	0.378
7,000		0.169								
8,000		0.158	0.194	0.224	0.250	0.274	0.296	0.316	0.335	0.353
9,000		0.149	0.183	0.211	0.236	0.258	0.279	0.298	0.316	0.333
10,000	0.100	0.141	0.173	0.200	0.224	0.245	0.264	0.283	0.300	0.316
20,000	0.071	0.100	0.122	0.141	0.158	0.173	0.187	0.200	0.212	0.223
30,000	0.058	0.082	0.100	0.115	0.129	0.141	0.153	0.163	0.173	0.182
40,000	0.050	0.071	0.087	0.100	0.112	0.122	0.132	0.141	0.150	0.158
50,000	0.045	0.063	0.077	0.089	0.100	0.110	0.118	0.126	0.134	0.141
60,000	0.041	0.058	0.071	0.082	0.091	0.100	0.108	0.115	0.122	0.129
70,000	0.038	0.053	0.065	0.076	0.084	0.093	0.100	0.107	0.113	0.119
80,000	0.035	0.050	0.061	0.071	0.079	0.087	0.094	0.100	0.106	0.112
90,000	0.033	0.047	0.058	0.067	0.075	0.082	0.088	0.094	0.100	0.105
100,000	0.032	0.045	0.055	0.063	0.071	0.077	0.084	0.089	0.095	0.100
200,000	0.022	0.032	0.039	0.045	0.050	0.055	0.059	0.063	0.067	0.071
300,000	0.018	0.026	0.032	0.037	0.041	0.045	0.048	0.052	0.055	0.058
400,000	0.016	0.022	0.027	0.032	0.035	0.039	0.042	0.045	0.047	0.050
500,000	0.014	0.020	0.024	0.028	0.032	0.035	0.037	0.040	0.042	0.045
600,000	0.013	0.018	0.022	0.026	0.029	0.032	0.034	0.037	0.039	0.041
700,000	0.012	0.017	0.021	0.024	0.027	0.029	0.032	0.034	0.036	0.038
800,000	0.011	0.016	0.019	0.022	0.025	0.027	0.030	0.032	0.034	0.035
900,000	0.011	0.015	0.018	0.021	0.024	0.026	0.028	0.030	0.032	0.033
1,000,000	0.010	0.014	0.017	0.020	0.022	0.024	0.026	0.028	0.030	0.032
2,000,000	0.007	0.010	0.012	0.014	0.016	0.017	0.019	0.020	0.021	0.022
3,000,000	0.006	0.008	0.010	0.012	0.013	0.014	0.015	0.016	0.017	0.018
4,000,000	0.005	0.007	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016
5,000,000	0.004	0.006	0.008	0.009	0.010	0.011	0.012	0.013	0.013	0.014
6,000,000	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.012	0.013
7,000,000	0.004	0.005	0.007	0.008	0.008	0.009	0.010	0.011	0.011	0.012
8,000,000	0.004	0.005	0.006	0.007	0.008	0.009	0.009	0.010	0.011	0.011
9,000,000	0.003	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.010	0.011
10,000,000	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.010
20,000,000	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007
30,000,000	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.006



Table A-1. Absolute standard errors for deaths per 1,000 discharges or per 1,000 enrollees—Continued

Discharges or enrollees in base	Deaths per 1,000 discharges or per 1,000 enrollees									
	1	2	3	4	5	6	7	8	9	10
	Standard error									
100					4.987	5.461	5.895			9.950
200				3.644	4.072	4.459	4.814	6.299	6.678	7.036
300				3.156	3.527	3.861	4.169	5.143	5.453	5.745
400			2.735	2.823	3.154	3.454	3.729	4.454	4.722	4.975
500			2.446					3.984	4.224	4.450
600		1.998	2.233	2.577	2.880	3.153	3.404	3.637	3.856	4.062
700		1.824	2.067	2.386	2.666	2.919	3.151	3.367	3.570	3.761
800		1.689	1.934	2.232	2.494	2.730	2.948	3.150	3.339	3.518
900		1.580	1.823	2.104	2.351	2.574	2.779	2.969	3.148	3.317
1,000	0.999	1.413	1.729	1.996	2.230	2.442	2.636	2.817	2.986	3.146
2,000	0.707	0.999	1.223	1.411	1.577	1.727	1.864	1.992	2.112	2.225
3,000	0.577	0.816	0.998	1.152	1.288	1.410	1.522	1.626	1.724	1.817
4,000	0.500	0.706	0.865	0.998	1.115	1.221	1.318	1.409	1.493	1.573
5,000	0.447	0.632	0.773	0.893	0.997	1.092	1.179	1.260	1.336	1.407
6,000	0.408	0.577	0.706	0.815	0.911	0.997	1.076	1.150	1.219	1.285
7,000	0.378	0.534	0.654	0.754	0.843	0.923	0.996	1.065	1.129	1.189
8,000	0.353	0.499	0.611	0.706	0.789	0.863	0.932	0.996	1.056	1.112
9,000	0.333	0.471	0.576	0.665	0.743	0.814	0.879	0.939	0.995	1.049
10,000	0.316	0.447	0.547	0.631	0.705	0.772	0.834	0.891	0.944	0.995
20,000	0.223	0.316	0.387	0.446	0.499	0.546	0.590	0.630	0.668	0.704
30,000	0.182	0.258	0.316	0.364	0.407	0.446	0.481	0.514	0.545	0.574
40,000	0.158	0.223	0.273	0.316	0.353	0.386	0.417	0.445	0.472	0.497
50,000	0.141	0.200	0.245	0.282	0.315	0.345	0.373	0.398	0.422	0.445
60,000	0.129	0.182	0.223	0.258	0.288	0.315	0.340	0.364	0.386	0.406
70,000	0.119	0.169	0.207	0.239	0.267	0.292	0.315	0.337	0.357	0.376
80,000	0.112	0.158	0.193	0.223	0.249	0.273	0.295	0.315	0.334	0.352
90,000	0.105	0.149	0.182	0.210	0.235	0.257	0.278	0.297	0.315	0.332
100,000	0.100	0.141	0.173	0.200	0.223	0.244	0.264	0.282	0.299	0.315
200,000	0.071	0.100	0.122	0.141	0.158	0.173	0.186	0.199	0.211	0.222
300,000	0.058	0.082	0.100	0.115	0.129	0.141	0.152	0.163	0.172	0.182
400,000	0.050	0.071	0.086	0.100	0.112	0.122	0.132	0.141	0.149	0.157
500,000	0.045	0.063	0.077	0.089	0.100	0.109	0.118	0.126	0.134	0.141
600,000	0.041	0.058	0.071	0.081	0.091	0.100	0.108	0.115	0.122	0.128
700,000	0.038	0.053	0.065	0.075	0.084	0.092	0.100	0.106	0.113	0.119
800,000	0.035	0.050	0.061	0.071	0.079	0.086	0.093	0.100	0.106	0.111
900,000	0.033	0.047	0.058	0.067	0.074	0.081	0.088	0.094	0.100	0.105
1,000,000	0.032	0.045	0.055	0.063	0.071	0.077	0.083	0.089	0.094	0.099
2,000,000	0.022	0.032	0.039	0.045	0.050	0.055	0.059	0.063	0.067	0.070
3,000,000	0.018	0.026	0.032	0.036	0.041	0.045	0.048	0.051	0.055	0.057
4,000,000	0.016	0.022	0.027	0.032	0.035	0.039	0.042	0.045	0.047	0.050
5,000,000	0.014	0.020	0.024	0.028	0.032	0.035	0.037	0.040	0.042	0.044
6,000,000	0.013	0.018	0.022	0.026	0.029	0.032	0.034	0.036	0.039	0.041
7,000,000	0.012	0.017	0.021	0.024	0.029	0.032	0.032	0.034	0.036	0.038
8,000,000	0.011	0.016	0.019	0.022	0.025	0.027	0.029	0.031	0.033	0.035
9,000,000	0.011	0.015	0.018	0.021	0.024	0.026	0.028	0.030	0.031	0.033
10,000,000	0.010	0.014	0.017	0.020	0.022	0.024	0.026	0.028	0.030	0.031
20,000,000	0.007	0.010	0.012	0.014	0.016	0.017	0.019	0.020	0.021	0.022
30,000,000	0.006	0.008	0.010	0.012	0.013	0.014	0.015	0.016	0.017	0.018

**Table A-1. Absolute standard errors for deaths per 1,000 discharges or per 1,000 enrollees—Continued**

Discharges or enrollees in base	Deaths per 1,000 discharges or per 1,000 enrollees									
	10	20	30	40	50	60	70	80	90	100
	Standard error									
10					48.734	53.104	57.053	60.663	63.992	94.868
20				35.777	39.791	43.359	46.583	49.531	52.249	67.082
30			28.972	30.984	34.460	37.550	40.342	42.895	45.249	54.772
40			24.125	27.713	30.822	33.586	36.083	38.367	40.472	47.434
50		19.799								42.426
60		18.074	22.023	25.298	28.137	30.659	32.939	35.024	36.946	38.730
70		16.733	20.389	23.422	26.049	28.385	30.496	32.426	34.205	35.857
80		15.652	19.072	21.909	24.367	26.552	28.521	30.331	31.996	33.541
90		14.757	17.981	20.656	22.973	25.033	26.895	28.597	30.166	31.623
100	9.950	14.000	17.059	19.596	21.794	23.749	25.515	27.129	28.618	30.000
200	7.036	9.899	12.062	13.856	15.411	16.793	18.042	19.183	20.236	21.213
300	5.745	8.083	9.849	11.314	12.583	13.711	14.731	15.663	16.523	17.321
400	4.975	7.000	8.529	9.798	10.897	11.874	12.757	13.565	14.309	15.000
500	4.450	6.261	7.629	8.764	9.747	10.621	11.411	12.133	12.798	13.416
600	4.062	5.715	6.964	8.000	8.898	9.695	10.416	11.075	11.683	12.247
700	3.761	5.292	6.448	7.407	8.238	8.976	9.644	10.254	10.817	11.339
800	3.518	4.950	6.031	6.928	7.706	8.396	9.021	9.592	10.118	10.607
900	3.317	4.667	5.686	6.532	7.265	7.916	8.505	9.043	9.539	10.000
1,000	3.146	4.427	5.394	6.197	6.892	7.510	8.068	8.579	9.050	9.487
2,000	2.225	3.130	3.814	4.382	4.873	5.310	5.705	6.066	6.399	6.708
3,000	1.817	2.556	3.114	3.578	3.979	4.336	4.658	4.953	5.225	5.477
4,000	1.573	2.214	2.697	3.098	3.446	3.755	4.034	4.290	4.525	4.743
5,000	1.407	1.980	2.412	2.771	3.082	3.359	3.608	3.837	4.047	4.243
6,000	1.285	1.807	2.202	2.530	2.814	3.066	3.294	3.502	3.695	3.873
7,000	1.189	1.673	2.039	2.342	2.605	2.839	3.050	3.243	3.421	3.586
8,000	1.112	1.565	1.907	2.191	2.437	2.655	2.853	3.033	3.200	3.354
9,000	1.049	1.476	1.798	2.066	2.297	2.503	2.689	2.860	3.017	3.162
10,000	0.995	1.400	1.706	1.960	2.179	2.375	2.551	2.713	2.862	3.000
20,000	0.704	0.990	1.206	1.386	1.541	1.679	1.804	1.918	2.024	2.121
30,000	0.574	0.808	0.985	1.131	1.258	1.371	1.473	1.566	1.652	1.732
40,000	0.497	0.700	0.853	0.980	1.090	1.187	1.276	1.356	1.431	1.500
50,000	0.445	0.626	0.763	0.876	0.975	1.062	1.141	1.213	1.280	1.342
60,000	0.406	0.572	0.696	0.800	0.890	0.970	1.042	1.108	1.168	1.225
70,000	0.376	0.529	0.645	0.741	0.824	0.898	0.964	1.025	1.082	1.134
80,000	0.352	0.495	0.603	0.693	0.771	0.840	0.902	0.959	1.012	1.061
90,000	0.332	0.467	0.569	0.653	0.726	0.792	0.850	0.904	0.954	1.000
100,000	0.315	0.443	0.539	0.620	0.689	0.751	0.807	0.858	0.905	0.949
200,000	0.222	0.313	0.381	0.438	0.487	0.531	0.571	0.607	0.640	0.671
300,000	0.182	0.256	0.311	0.358	0.398	0.434	0.466	0.495	0.522	0.548
400,000	0.157	0.221	0.270	0.310	0.345	0.375	0.403	0.429	0.452	0.474
500,000	0.141	0.198	0.241	0.277	0.308	0.336	0.361	0.384	0.405	0.424
600,000	0.128	0.181	0.220	0.253	0.281	0.307	0.329	0.350	0.369	0.387
700,000	0.119	0.167	0.204	0.234	0.260	0.284	0.305	0.324	0.342	0.359
800,000	0.111	0.157	0.191	0.219	0.244	0.266	0.285	0.303	0.320	0.335
900,000	0.105	0.148	0.180	0.207	0.230	0.250	0.269	0.286	0.302	0.316

Table A-1. Absolute standard errors for deaths per 1,000 discharges or per 1,000 enrollees—Continued

Discharges or enrollees in base	Deaths per 1,000 discharges or per 1,000 enrollees									
	10	20	30	40	50	60	70	80	90	100
1,000,000	0.099	0.140	0.171	0.196	0.218	0.237	0.255	0.271	0.286	0.300
2,000,000	0.070	0.099	0.121	0.139	0.154	0.168	0.180	0.192	0.202	0.212
3,000,000	0.057	0.081	0.098	0.113	0.126	0.137	0.147	0.157	0.165	0.173
4,000,000	0.050	0.070	0.085	0.098	0.109	0.119	0.128	0.136	0.143	0.150
5,000,000	0.044	0.063	0.076	0.088	0.097	0.106	0.114	0.121	0.128	0.134
6,000,000	0.041	0.057	0.070	0.080	0.089	0.097	0.104	0.111	0.117	0.122
7,000,000	0.038	0.053	0.064	0.074	0.082	0.090	0.096	0.103	0.108	0.113
8,000,000	0.035	0.049	0.060	0.069	0.077	0.084	0.090	0.096	0.101	0.106
9,000,000	0.033	0.047	0.057	0.065	0.073	0.079	0.085	0.090	0.095	0.100
10,000,000	0.031	0.044	0.054	0.062	0.069	0.075	0.081	0.086	0.090	0.095
20,000,000	0.022	0.031	0.038	0.044	0.049	0.053	0.057	0.061	0.064	0.067
30,000,000	0.018	0.026	0.031	0.036	0.040	0.043	0.047	0.050	0.052	0.055
Deaths per 1,000 discharges or per 1,000 enrollees										
10	Deaths per 1,000 discharges or per 1,000 enrollees					Deaths per 1,000 discharges or per 1,000 enrollees				
	100	200	300	400	500	100	200	300	400	500
10	94.868	126.491	144.914	154.919	158.114	40,000	2,000	2,291	2,449	2,500
20	67.082	89.443	102.469	109.545	111.803	50,000	1,789	2,049	2,191	2,236
30	54.772	73.030	83.666	89.443	91.287	60,000	1,633	1,871	2,000	2,041
40	47.434	63.246	72.457	77.460	79.057	70,000	1,512	1,732	1,852	1,890
50	42.426	56.569	64.807	69.282	70.711	80,000	1,414	1,620	1,732	1,768
60	38.730	51.640	59.161	63.246	64.550	90,000	1,333	1,528	1,633	1,667
70	35.857	47.809	54.772	58.554	59.761	100,000	1,265	1,449	1,549	1,581
80	33.541	44.721	51.235	54.772	55.902	200,000	0.894	1,025	1,095	1,118
90	31.623	42.164	48.305	51.640	52.705	300,000	0.730	0.837	0.894	0.913
100	30.000	40.000	45.826	48.990	50.000	400,000	0.632	0.725	0.775	0.791
200	21.213	28.284	32.404	34.641	35.355	500,000	0.566	0.648	0.693	0.707
300	17.321	23.094	26.458	28.284	28.868	600,000	0.516	0.592	0.632	0.645
400	15.000	20.000	22.913	24.495	25.000	700,000	0.478	0.548	0.586	0.598
500	13.416	17.889	20.494	21.909	22.361	800,000	0.447	0.512	0.548	0.559
600	12.247	16.330	18.708	20.000	20.412	900,000	0.422	0.483	0.516	0.527
700	11.339	15.119	17.321	18.516	18.898	1,000,000	0.400	0.458	0.490	0.500
800	10.607	14.142	16.202	17.321	17.678	2,000,000	0.283	0.324	0.346	0.354
900	10.000	13.333	15.275	16.333	16.667	3,000,000	0.231	0.265	0.283	0.289
1,000	9.487	12.649	14.491	15.492	15.811	4,000,000	0.200	0.229	0.245	0.250
2,000	6.708	8.944	10.247	10.954	11.180	5,000,000	0.179	0.205	0.219	0.224
3,000	5.477	7.303	8.367	8.944	9.129	6,000,000	0.163	0.187	0.200	0.204
4,000	4.743	6.325	7.246	7.746	7.906	7,000,000	0.151	0.173	0.185	0.189
5,000	4.243	5.657	6.481	6.928	7.071	8,000,000	0.141	0.162	0.173	0.177
6,000	3.873	5.164	5.916	6.325	6.455	9,000,000	0.133	0.153	0.163	0.167
7,000	3.586	4.781	5.477	5.855	5.976	10,000,000	0.126	0.145	0.155	0.158
8,000	3.354	4.472	5.123	5.477	5.590	20,000,000	0.089	0.102	0.110	0.112
9,000	3.162	4.216	4.830	5.164	5.270	30,000,000	0.073	0.084	0.089	0.091
10,000	3.000	4.000	4.583	4.899	5.000					
20,000	2.121	2.828	3.240	3.464	3.536					
30,000	1.732	2.309	2.646	2.828	2.887					



**Table A-2. Approximate standard errors for discharges per 1,000 enrollees**

Enrollees in base	Discharges per 1,000 enrollees															
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	2	3	4	5	6	7
	Standard error															
1,000					0.750	0.821	0.887	0.948	1.006	1.499	2.119	2.595	2.996	3.349	3.668	3.961
2,000					0.612	0.670	0.724	0.774	0.821	1.060	1.499	1.835	2.118	2.368	2.593	2.801
3,000				0.547						0.865	1.224	1.498	1.730	1.933	2.117	2.287
4,000			0.411	0.474	0.530	0.581	0.627	0.670	0.711	0.749	1.060	1.298	1.498	1.674	1.834	1.980
5,000		0.300	0.367	0.424	0.474	0.519	0.561	0.600	0.636	0.670	0.948	1.161	1.340	1.498	1.640	1.771
6,000		0.274	0.335	0.387	0.433	0.474	0.512	0.547	0.581	0.612	0.865	1.059	1.223	1.367	1.497	1.617
7,000		0.253	0.310	0.358	0.401	0.439	0.474	0.507	0.537	0.567	0.801	0.981	1.132	1.266	1.386	1.497
8,000		0.237	0.290	0.335	0.375	0.411	0.443	0.474	0.503	0.530	0.749	0.917	1.059	1.184	1.297	1.400
9,000		0.223	0.274	0.316	0.353	0.387	0.418	0.447	0.474	0.500	0.706	0.865	0.999	1.116	1.223	1.320
10,000	0.150	0.212	0.260	0.300	0.335	0.367	0.397	0.424	0.450	0.474	0.670	0.821	0.947	1.059	1.160	1.252
20,000	0.106	0.150	0.184	0.212	0.237	0.260	0.280	0.300	0.318	0.335	0.474	0.580	0.670	0.749	0.820	0.886
30,000	0.087	0.122	0.150	0.173	0.194	0.212	0.229	0.245	0.260	0.274	0.387	0.474	0.547	0.611	0.670	0.723
40,000	0.075	0.106	0.130	0.150	0.168	0.184	0.198	0.212	0.225	0.237	0.335	0.410	0.474	0.529	0.580	0.626
50,000	0.067	0.095	0.116	0.134	0.150	0.164	0.177	0.190	0.201	0.212	0.300	0.367	0.424	0.474	0.519	0.560
60,000	0.061	0.087	0.106	0.122	0.137	0.150	0.162	0.173	0.184	0.194	0.274	0.335	0.387	0.432	0.473	0.511
70,000	0.057	0.080	0.098	0.113	0.127	0.139	0.150	0.160	0.170	0.179	0.253	0.310	0.358	0.400	0.438	0.473
80,000	0.053	0.075	0.092	0.106	0.119	0.130	0.140	0.150	0.159	0.168	0.237	0.290	0.335	0.374	0.410	0.443
90,000	0.050	0.071	0.087	0.100	0.112	0.122	0.132	0.141	0.150	0.158	0.223	0.274	0.316	0.353	0.387	0.417
100,000	0.047	0.067	0.082	0.095	0.106	0.116	0.125	0.134	0.142	0.150	0.212	0.260	0.300	0.335	0.367	0.396
200,000	0.034	0.047	0.058	0.067	0.075	0.082	0.089	0.095	0.101	0.106	0.150	0.183	0.212	0.237	0.259	0.280
300,000	0.027	0.039	0.047	0.055	0.061	0.067	0.072	0.077	0.082	0.087	0.122	0.150	0.173	0.193	0.212	0.225
400,000	0.024	0.034	0.041	0.047	0.053	0.058	0.063	0.067	0.071	0.075	0.106	0.130	0.150	0.167	0.183	0.198
500,000	0.021	0.030	0.037	0.042	0.047	0.052	0.056	0.060	0.064	0.067	0.095	0.116	0.134	0.150	0.164	0.177
600,000	0.019	0.027	0.034	0.039	0.043	0.047	0.051	0.055	0.058	0.061	0.087	0.106	0.122	0.137	0.150	0.162
700,000	0.018	0.025	0.031	0.036	0.040	0.044	0.047	0.051	0.054	0.057	0.080	0.098	0.113	0.127	0.139	0.150
800,000	0.017	0.024	0.029	0.034	0.037	0.041	0.044	0.047	0.050	0.053	0.075	0.092	0.106	0.118	0.130	0.140
900,000	0.016	0.022	0.027	0.032	0.035	0.039	0.042	0.045	0.047	0.050	0.071	0.087	0.100	0.112	0.122	0.132
1,000,000	0.015	0.021	0.026	0.030	0.034	0.037	0.040	0.042	0.045	0.047	0.067	0.082	0.095	0.106	0.116	0.125
2,000,000	0.011	0.015	0.018	0.021	0.024	0.026	0.028	0.030	0.032	0.034	0.047	0.058	0.067	0.075	0.082	0.089
3,000,000	0.009	0.012	0.015	0.017	0.019	0.021	0.023	0.024	0.026	0.027	0.039	0.047	0.055	0.061	0.067	0.072
4,000,000	0.007	0.011	0.013	0.015	0.017	0.018	0.020	0.021	0.022	0.024	0.034	0.041	0.047	0.053	0.058	0.063
5,000,000	0.007	0.009	0.012	0.013	0.015	0.016	0.018	0.019	0.020	0.021	0.030	0.037	0.042	0.047	0.052	0.056
6,000,000	0.006	0.009	0.011	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.027	0.034	0.039	0.043	0.047	0.051
7,000,000	0.006	0.008	0.010	0.011	0.013	0.014	0.015	0.016	0.017	0.018	0.025	0.031	0.036	0.040	0.044	0.047
8,000,000	0.005	0.007	0.009	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.024	0.029	0.033	0.037	0.041	0.044
9,000,000	0.005	0.007	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.022	0.027	0.032	0.035	0.039	0.042
10,000,000	0.005	0.007	0.008	0.009	0.011	0.012	0.013	0.013	0.014	0.015	0.021	0.026	0.030	0.033	0.037	0.040
20,000,000	0.003	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.010	0.011	0.015	0.018	0.021	0.024	0.026	0.028
30,000,000	0.003	0.004	0.005	0.005	0.006	0.007	0.007	0.008	0.008	0.009	0.012	0.015	0.017	0.019	0.021	0.023

Table A-2. Approximate standard errors for discharges per 1,000 enrollees—Continued

Enrollees in base	Discharges per 1,000 enrollees										Standard error	100	200	300	400	500
	8	9	10	20	30	40	50	60	70	80						
1,000	4.233	4.489	4.731	6.675	8.157	9.397	10.483	11.457	12.347	13.169	13.936	14.655	20.238	24.173	27.187	29.562
2,000	2.993	3.174	3.345	4.720	5.768	6.645	7.413	8.101	8.731	9.312	9.854	10.363	14.310	17.093	19.224	20.903
3,000	2.444	2.592	2.731	3.854	4.709	5.426	6.052	6.615	7.129	7.603	8.046	8.461	11.684	13.956	15.696	17.068
4,000	2.117	2.244	2.365	3.338	4.078	4.699	5.241	5.729	6.173	6.585	6.968	7.328	10.119	12.087	13.593	14.781
5,000	1.893	2.007	2.116	2.985	3.648	4.203	4.688	5.124	5.522	5.889	6.232	6.554	9.051	10.811	12.158	13.220
6,000	1.728	1.833	1.931	2.725	3.330	3.836	4.280	4.677	5.041	5.376	5.689	5.983	8.262	9.869	11.099	12.069
7,000	1.600	1.697	1.788	2.523	3.083	3.552	3.962	4.330	4.667	4.977	5.267	5.539	7.649	9.137	10.276	11.173
8,000	1.497	1.587	1.673	2.360	2.884	3.323	3.706	4.051	4.365	4.656	4.927	5.181	7.155	8.547	9.612	10.452
9,000	1.411	1.496	1.577	2.225	2.719	3.132	3.494	3.819	4.116	4.390	4.645	4.885	6.746	8.058	9.062	9.854
10,000	1.339	1.419	1.496	2.111	2.579	2.972	3.315	3.623	3.904	4.164	4.407	4.634	6.400	7.644	8.597	9.348
20,000	0.947	1.004	1.058	1.493	1.824	2.101	2.344	2.562	2.761	2.945	3.116	3.277	4.525	5.405	6.079	6.610
30,000	0.773	0.820	0.864	1.219	1.489	1.716	1.914	2.092	2.254	2.404	2.544	2.676	3.695	4.413	4.964	5.397
40,000	0.669	0.710	0.748	1.055	1.290	1.486	1.657	1.812	1.952	2.082	2.203	2.317	3.200	3.822	4.299	4.674
50,000	0.599	0.635	0.669	0.944	1.154	1.329	1.483	1.620	1.746	1.862	1.971	2.073	2.862	3.419	3.845	4.181
60,000	0.546	0.580	0.611	0.862	1.053	1.213	1.353	1.479	1.594	1.700	1.799	1.892	2.613	3.121	3.510	3.816
70,000	0.506	0.537	0.565	0.798	0.975	1.123	1.253	1.369	1.476	1.574	1.666	1.752	2.419	2.889	3.249	3.533
80,000	0.473	0.502	0.529	0.746	0.912	1.051	1.172	1.281	1.380	1.472	1.558	1.639	2.263	2.703	3.040	3.305
90,000	0.446	0.473	0.499	0.704	0.860	0.991	1.105	1.208	1.301	1.388	1.469	1.545	2.133	2.548	2.866	3.116
100,000	0.423	0.449	0.473	0.668	0.816	0.940	1.048	1.146	1.235	1.317	1.394	1.466	2.024	2.417	2.719	2.956
200,000	0.299	0.317	0.335	0.472	0.577	0.665	0.741	0.810	0.873	0.931	0.985	1.036	1.431	1.709	1.922	2.090
300,000	0.244	0.259	0.273	0.385	0.471	0.543	0.605	0.661	0.713	0.760	0.805	0.846	1.168	1.396	1.570	1.707
400,000	0.212	0.224	0.237	0.334	0.408	0.470	0.524	0.573	0.617	0.658	0.697	0.733	1.012	1.209	1.359	1.478
500,000	0.189	0.201	0.212	0.299	0.365	0.420	0.469	0.512	0.552	0.589	0.623	0.655	0.905	1.081	1.216	1.322
600,000	0.173	0.183	0.193	0.273	0.333	0.384	0.428	0.468	0.504	0.538	0.569	0.598	0.826	0.987	1.110	1.207
700,000	0.160	0.170	0.179	0.252	0.308	0.355	0.396	0.433	0.467	0.498	0.527	0.554	0.765	0.914	1.028	1.117
800,000	0.150	0.159	0.167	0.236	0.288	0.332	0.371	0.405	0.437	0.466	0.493	0.518	0.716	0.855	0.961	1.045
900,000	0.141	0.150	0.158	0.223	0.272	0.313	0.349	0.382	0.412	0.439	0.465	0.489	0.675	0.806	0.906	0.985
1,000,000	0.134	0.142	0.150	0.211	0.258	0.297	0.331	0.362	0.390	0.416	0.441	0.463	0.640	0.764	0.860	0.935
2,000,000	0.095	0.100	0.106	0.149	0.182	0.210	0.234	0.256	0.276	0.294	0.312	0.328	0.453	0.541	0.608	0.661
3,000,000	0.077	0.082	0.086	0.122	0.149	0.172	0.191	0.209	0.225	0.240	0.254	0.268	0.369	0.441	0.496	0.540
4,000,000	0.067	0.071	0.075	0.106	0.129	0.149	0.166	0.181	0.195	0.208	0.220	0.232	0.320	0.382	0.430	0.467
5,000,000	0.060	0.063	0.067	0.094	0.115	0.133	0.148	0.162	0.175	0.186	0.197	0.207	0.286	0.342	0.384	0.418
6,000,000	0.055	0.058	0.061	0.086	0.105	0.121	0.135	0.148	0.159	0.170	0.180	0.189	0.261	0.312	0.351	0.382
7,000,000	0.051	0.054	0.057	0.080	0.097	0.112	0.125	0.137	0.148	0.157	0.167	0.175	0.242	0.289	0.325	0.353
8,000,000	0.047	0.050	0.053	0.075	0.091	0.105	0.117	0.128	0.138	0.147	0.156	0.164	0.226	0.270	0.304	0.331
9,000,000	0.045	0.047	0.050	0.070	0.086	0.099	0.110	0.121	0.130	0.139	0.147	0.154	0.213	0.255	0.287	0.312
10,000,000	0.042	0.045	0.047	0.067	0.082	0.094	0.105	0.115	0.123	0.132	0.139	0.147	0.202	0.242	0.272	0.296
20,000,000	0.030	0.032	0.033	0.047	0.058	0.066	0.074	0.081	0.087	0.093	0.099	0.104	0.143	0.171	0.192	0.209
30,000,000	0.024	0.026	0.027	0.039	0.047	0.054	0.061	0.066	0.071	0.076	0.080	0.085	0.117	0.140	0.157	0.171

**Table A-3. Number of metropolitan statistical areas (MSAs) and rural areas, by division: United States, 1986**

Division	MSAs and rural areas
New England	21
Middle Atlantic	38
East North Central	63
West North Central	34
South Atlantic	64
East South Central	26
West South Central	48
Mountain	28
Pacific	43

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- Hansen, M.H., Hurwitz, W.N., and Madow, W.G.: *Sample Survey Methods and Theory*. Vol. 1. New York. John Wiley and Sons, Inc., 1953.



# Appendix B. Procedure categories

Procedure	ICD-9-CM codes
Percutaneous transluminal coronary angioplasty (PTCA)	36.0 (pre-Oct. 1, 1986); 36.01, 36.02 (post Oct. 1986); add 36.05 beginning Oct. 1987.
Coronary artery bypass graft	DRGs 106, 107
Cardiac catheterization	37.21-37.23
Permanent cardiac pacemaker implantation	DRGs 115, 116
Carotid endarterectomy	38.12
Partial excision of the large intestine	45.7
Cholecystectomy	51.2
Repair of inguinal hernia	53.0-53.1
Prostatectomy	60.2-60.6
Hysterectomy	68.4-68.7
Total knee replacement	81.41
Total hip replacement	81.5
Reduction of fracture of the femur	79.05, 79.15, 79.25, 79.35
Other arthroplasty of hip	81.6

NOTE: ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.







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